# SEXUALLY TRANSMITTED DISEASE MORBIDITY

# 1999

# WASHINGTON STATE


INFECTIOUS DISEASE AND REPRODUCTIVE HEALTH:
STD/TB SERVICES AND IDRH ASSESSMENT UNIT

# SEXUALLY TRANSMITTED DISEASE MORBIDITY 1999

# WASHINGTON STATE


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**Sexually Transmitted Disease Morbidity ~ 1999**
**Washington State**
**TABLE OF CONTENTS**


**Executive Summary** ..... **1**

**Chlamydia** ..... **3**
Figure 1. Reported Chlamydia Cases and Incidence Rates, 1988-1999 ..... 5
Figure 2. Age-Specific Chlamydia Incidence Rates by Gender, 1999 ..... 6
Figure 3. Chlamydia Incidence Rates by Race, 1993-1999 ..... 7
Figure 4. Chlamydia Incidence Rates by County, 1999 on Washington State Map ..... 8
Figure 5. Chlamydia Incidence Rates by County, 1999, Ranked from Highest to Lowest ..... 9
Figure 6. Reported Chlamydia Cases by County, 1999 ..... 10

**Gonorrhea** ..... **11**

Figure 7. Reported Gonorrhea Cases and Incidence Rates, 1988-1999 ..... 13
Figure 8. Age-Specific Gonorrhea Incidence Rates by Sex, 1999 ..... 14
Figure 9. Gonorrhea Incidence Rates by Race, 1993-1999 ..... 15
Figure 10. Gonorrhea Incidence Rates by County, 1999 on Washington State Map ..... 16
Figure 11. Gonorrhea Incidence Rates by County, 1999, Ranked from Highest to Lowest ..... 17
Figure 12. Gonorrhea Incidence Rates by Race, 1993-1999 ..... 18

**Syphilis** ..... **19**

Figure 13. Reported Syphilis Cases by Disease Stage, 1999 ..... 21
Figure 14. Reported Syphilis Cases by County, 1999 on Washington State Map ..... 22
Figure 15. P & S Syphilis Incidence Rates/Cases, King Co. Vs. Washington State, 1999 ..... 23
Figure 16. P & S Syphilis Incidence Rates by Gender, 1993-1999 ..... 24

**Other Sexually Transmitted Diseases** ..... **25**

**Tables** ..... **26**
Table 1. Reported Chlamydia Cases and Incidence Rates by Sex and County, 1999 ..... 26
Table 2. Reported Chlamydia Cases and Incidence Rates by Age (15-24 years) and County, 1999 ..... 27
Table 3. Reported Gonorrhea Cases and Incidence Rates by Sex and County, 1999 ..... 28
Table 4. Reported Gonorrhea Cases and Incidence Rates by Age (15-24 years) and County, 1999 ..... 29
Table 5. Reported STD Cases and Incidence Rates by Disease and County, 1999 ..... 30

**Appendix** ..... **32**
Data Sources and Methods ..... 32
Glossary ..... 32
Guidelines to Prevent Misuse of Data ..... 34
References ..... 35

## EXECUTIVE SUMMARY

The 1999 annual Sexually Transmitted Disease (STD) summary includes morbidity data and incidence rates for Washington State's legally reportable STDs. These include gonorrhea, chlamydia, syphilis, herpes simplex-initial genital infection and neonatal, nongonococcal urethritis (NGU), acute pelvic inflammatory disease (PID) (not caused by gonorrhea or chlamydia), chancroid, lymphogranuloma venereum (LGV) and granuloma inguinale (GI). Sexually transmitted diseases are the most commonly reported communicable diseases in Washington State.

### Chlamydia

In 1999, chlamydia was the most commonly reportable STD in Washington State. Reported cases totaled 11,964, yielding a statewide incidence rate of 207.7 per 100,000 population. Females continued to be selectively tested more frequently and, consequently, diagnosed at a higher rate than males. The statewide chlamydia incidence rate for females was 307.2 per 100,000, which was over three times the incidence rate for males—107.5 per 100,000. Chlamydia cases and rates have increased 7.4% over the previous year, though this increase may be the result of more sensitive testing methods rather than an actual increase in incidence rate.

### Gonorrhea

In 1999, reported gonorrhea cases increased slightly to 2,132 from an all-time low of 1,949 cases in 1998, yielding a statewide gonorrhea incidence rate of 37.0 per 100,000 population. Gonorrhea screening is universal in all public STD clinics in Washington State and the gender-specific incidence rates may accurately reflect true disease incidence. The female gonorrhea rate was 34.9 per 100,000 and the male gonorrhea rate was 39.1 per 100,000 for the state as a whole. The slight increase in the 1999 male gonorrhea rate was attributable to an increase in the rate in Pierce County and an ongoing gonorrhea outbreak among men who have sex with men in Seattle-King County.

### Syphilis

Primary, secondary, and early latent cases of syphilis totaled 94 in 1999. The statewide early syphilis rate was 1.6 per 100,000 population. When the 110 cases of late latent/late syphilis are included in this calculation, the statewide syphilis rate rises to 3.5 per 100,000. An outbreak of syphilis among men who have sex with men in Seattle nearly doubled the number of primary and secondary cases statewide from 44 in 1998 to 77 in 1999.

### Other STDs

In 1999, 1,952 cases of initial genital herpes were reported, yielding an incidence rate of 33.9 per 100,000 population. Among males, there were 1,051 new cases of NGU reported; among females, 297 new cases of acute PID (not attributable to chlamydial or gonococcal infection) were reported. These data may be of limited utility in that these conditions are considered to be significantly under-reported and are proposed for removal, with the exception of herpes, from the list of reportable diseases. No cases of chancroid, lymphogranuloma (LGV) or granuloma inguinale (GI) were identified in 1999.

## CHLAMYDIA

*Chlamydia trachomatis* is the most common reported bacterial STD in the United States. New estimates indicate approximately 3 million new infections each year (Kaiser Family Foundation, 1998). Most chlamydia infections in women, and many in men, are asymptomatic. Comprehensive screening and treatment of infected individuals have been shown to significantly reduce the prevalence of chlamydia infections.

Since 1988, Washington State has participated in chlamydia screening and prevalence monitoring activities through the federal Infertility Prevention Project (IPP). All women attending STD clinics, and women seeking reproductive health care in other facilities who meet selective screening criteria, are the populations targeted for chlamydia screening. Genital tract infections with chlamydia are a major cause of pelvic inflammatory disease (PID), ectopic pregnancy and infertility among women; thus IPP is directed specifically at the female population. Active disease surveillance among women has resulted in higher rates of chlamydia incidence among this population. Recent efforts at improving the standard of care for male partners of infected women have resulted in increased reporting of male cases. A more sensitive testing method for detecting chlamydia infection in cervical specimens from women and in urine samples from men has been used in Washington State.

*State-Level Chlamydia Trends*

Figure 1 reports the number of chlamydia cases and the calculated incidence rate for Washington State. After nearly a decade of decline, reported chlamydia cases have increased 25.6% and rates have increased 22.3% from 1997 to 1999. Several factors may contribute to the observed increase, in approximate order of significance:

- More sensitive laboratory techniques
- Increase in routine screening
- Improved STD surveillance and reporting methods
- Increased transmission risk behaviors

Though the number and rate of chlamydia infection has increased over the last several years, the incidence rate for Washington State remains well below the most recent projected national incidence rate of 236.6 (CDC,1998).

Figure 2 presents the age-specific incidence rate by gender for chlamydia cases reported in Washington State in 1999. Of immediate note in this figure are the disproportionate incidence rates among younger women:

- Peak female age-specific rates in 15-19 year olds
- Peak male age-specific incidence in 20-24 year olds
- 70.3% of all cases reported in the 15-24 age group
- Increase from 1998 noted primarily in males20-29 and females 20-24

Several factors contribute to this pattern, including potentially selective screening of young women and a higher incidence of sexual activity in this age group. The overall rate of

chlamydia among women is observed to be 307.2 per 100,000 while the male rate is almost three times less at 107.5 per 100,000. Men diagnosed with nongonococcal urethritis are often treated presumptively and no laboratory tests are performed - which would trigger a report to the local health jurisdiction and the Department of Health. For this reason, chlamydia may be significantly under-reported among males. In light of this, and the well documented disparity in screening males versus females in reproductive health settings, the true chlamydia morbidity may be much closer to 1:1 for males and females.

The trend in chlamydia incidence rates by race and Hispanic origin is shown in Figure 3. Increases are noted in 1999 for all categories, though of particular note is the magnitude of increase among non-whites and those of Hispanic origin. It should be noted here that direct comparison between race and Hispanic origin is not possible in that these are not mutually exclusive categories (e.g., cases can be counted as Hispanic *and* White, or Hispanic *and* Black, etc.). Race and ethnicity are risk markers that correlate with other more fundamental determinants of health status such as:

- Poverty
- Access to health care
- Health care seeking behavior
- Illicit drug use
- Living in communities with high prevalence of STDs

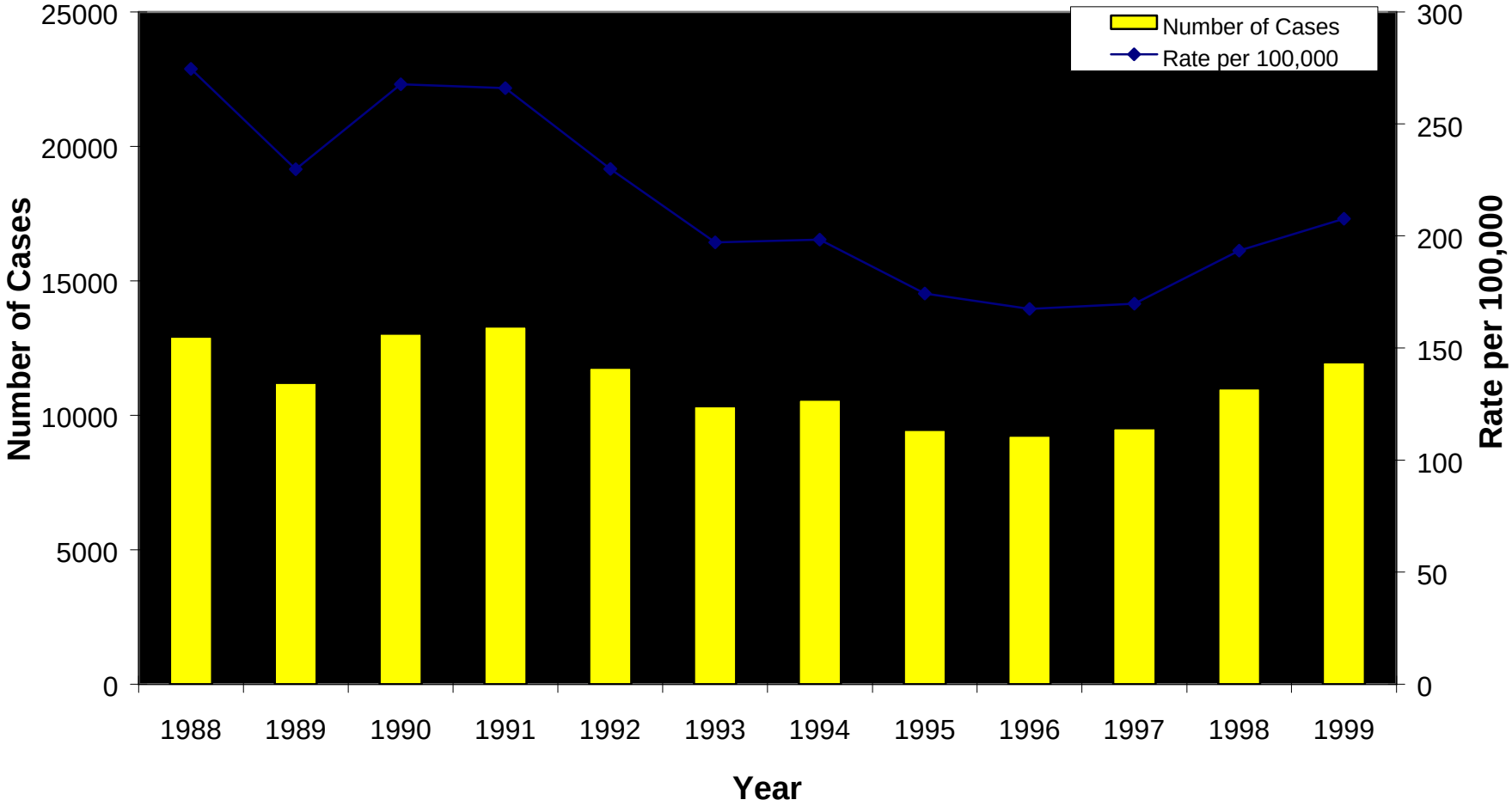
Caution is ordinarily advised when interpreting incidence rates by race when a significant portion of cases are reported without this information. However, additional analysis of chlamydia reports, assuming the unlikely event that all cases missing race information are white, yielded identical rankings by race as those presented in Figure 3.

*County-Level Chlamydia Trends*

To assess the burden of disease and compare this burden across counties of differing population sizes, county-specific incidence rates were calculated (Figure 4). Thirty-five of Washington's 39 counties reported at least five cases of chlamydia. Figure 5 shows these county-specific incidence rates ranked from highest to lowest.

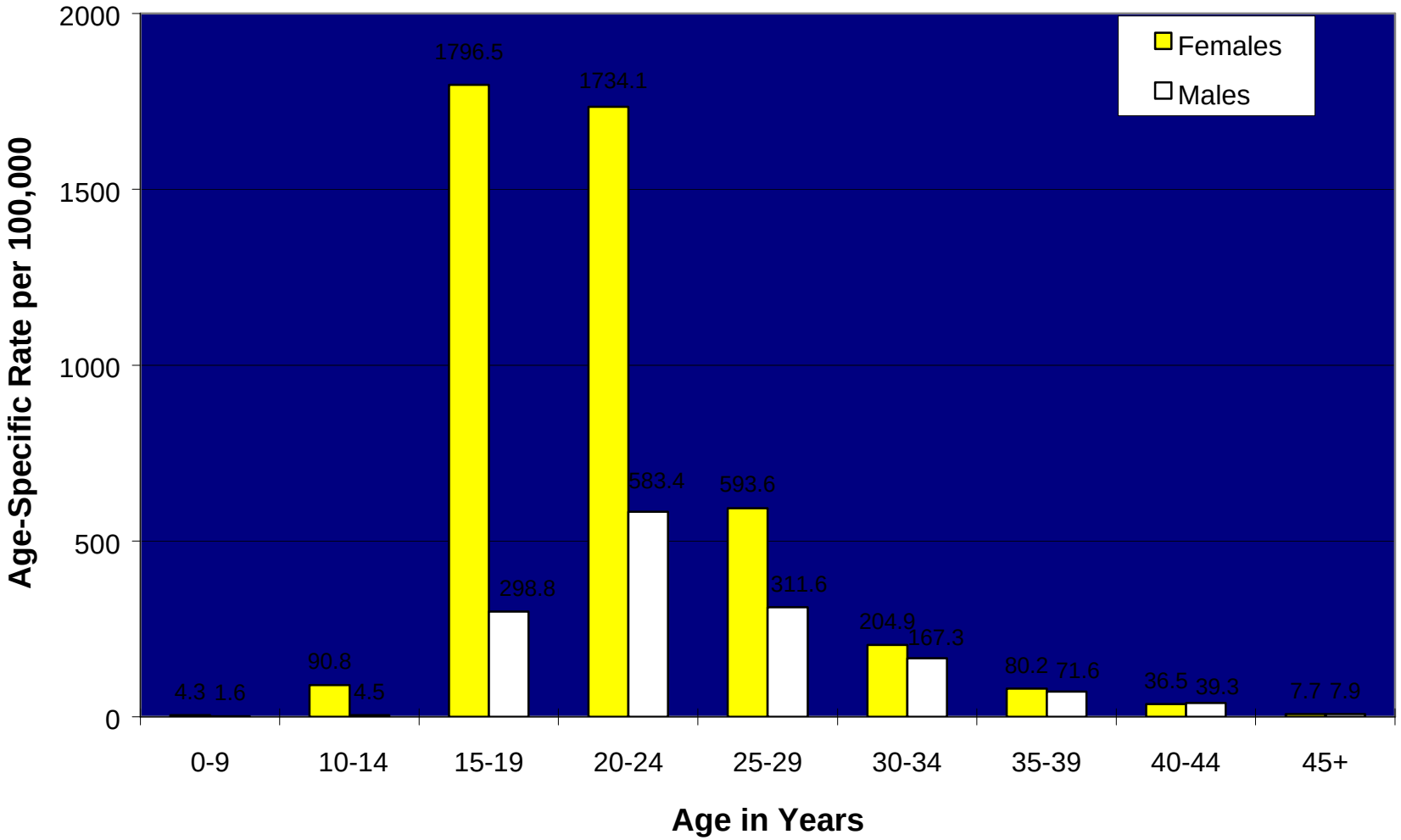
The largest number of chlamydia cases (3,949) was reported by King county as seen in Figure 6. King county had the largest number of male cases (1,295) and the highest male incidence rate at 153.0 per 100,000. King county also had the largest number of female chlamydia cases (2,654), yet the incidence rate of 310.8 per 100,000 for females was ranked tenth among counties in Washington State. The highest county-specific incidence rate for chlamydia among women was Franklin County with a rate of 642.9 per 100,000. Due to under-diagnosing, under-reporting, and the asymptomatic nature of the disease, chlamydia incidence rates are considered conservative. These assumptions make county-to-county comparisons generally unreliable, especially among counties with relatively small populations.

# Figure 1. Reported Chlamydia Cases and Incidence Rates*, Washington State, 1988-1999



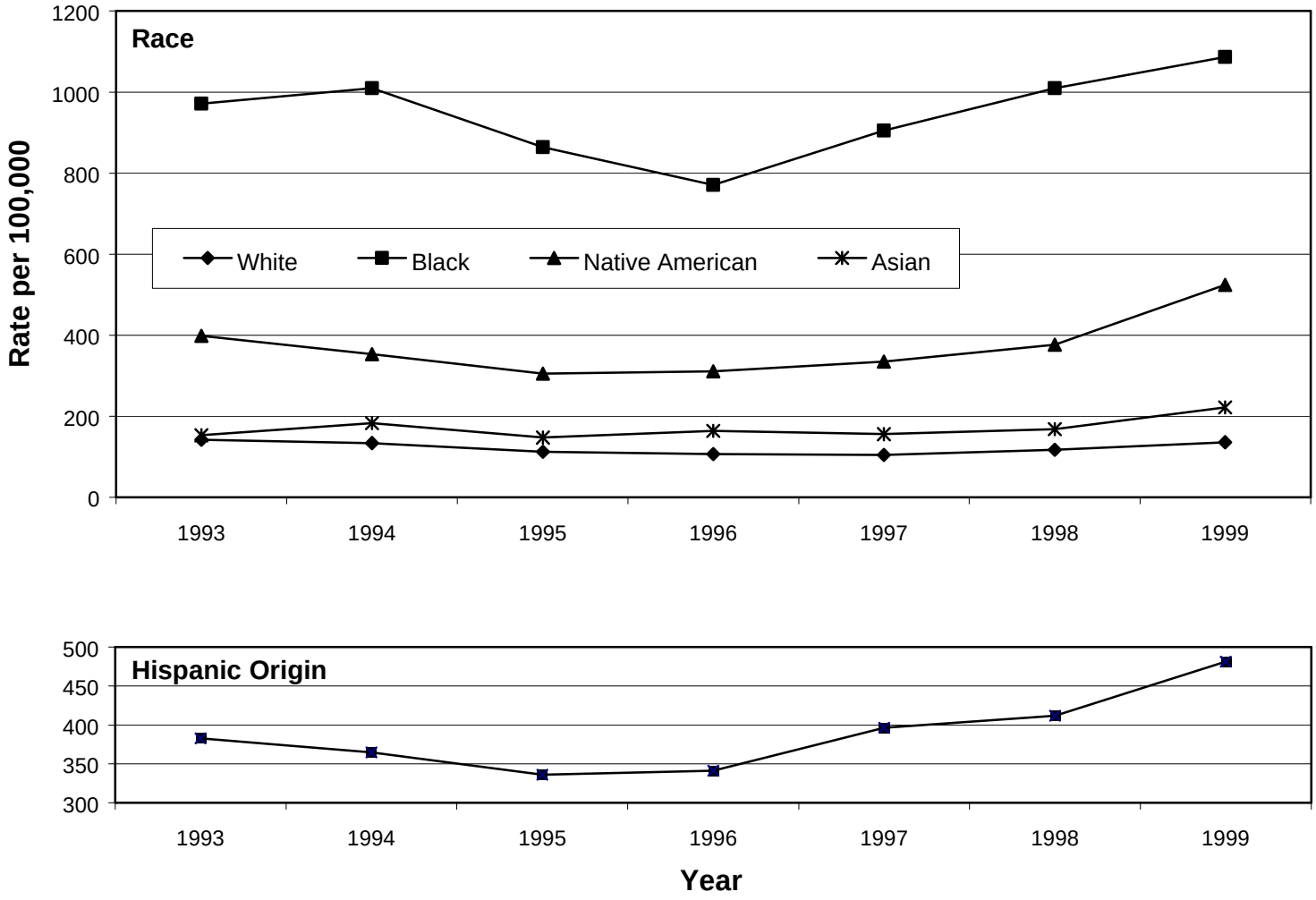

* This is the crude rate, not adjusted for age.

# Figure 2. Age-Specific Chlamydia Incidence Rates* by Gender, Washington State, 1999




* Age missing for 213 (2.39%) female cases and 60 (1.94%) male cases and excluded from calculated rate.

# Figure 3. Chlamydia Incidence Rates* by Race**, Washington State, 1993-1999

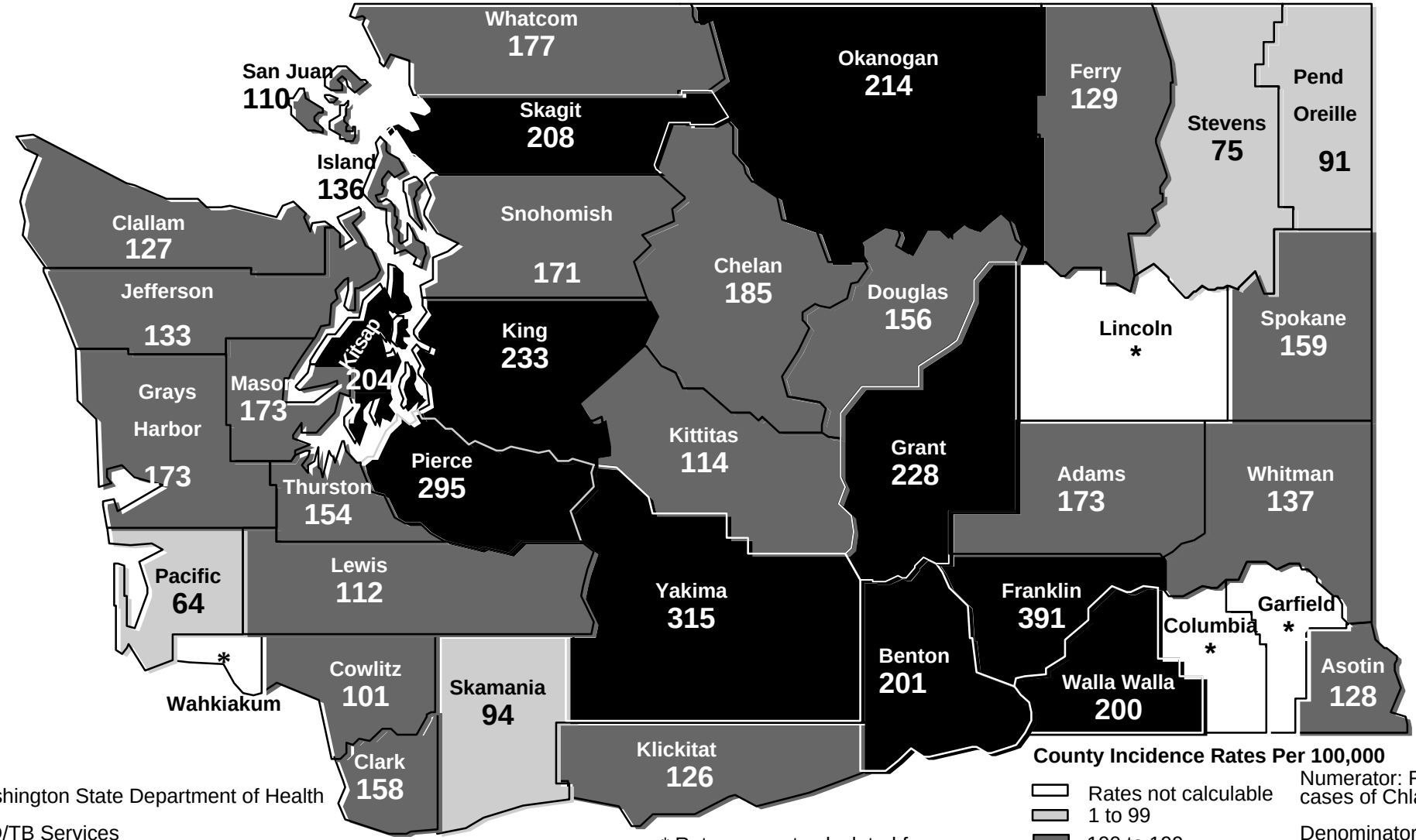



* This is the crude rate, not adjusted for age. Race data missing for 18.3% of cases; ethnicity data missing for 20.5% of cases. Because of missing data, comparisons between races/ethnicities is not advised.

** Race and ethnicity counted separately, e.g. a case can be both "White" and "Hispanic."

# Figure 4. Chlamydia Incidence Rates By County

## Washington State/ 1999

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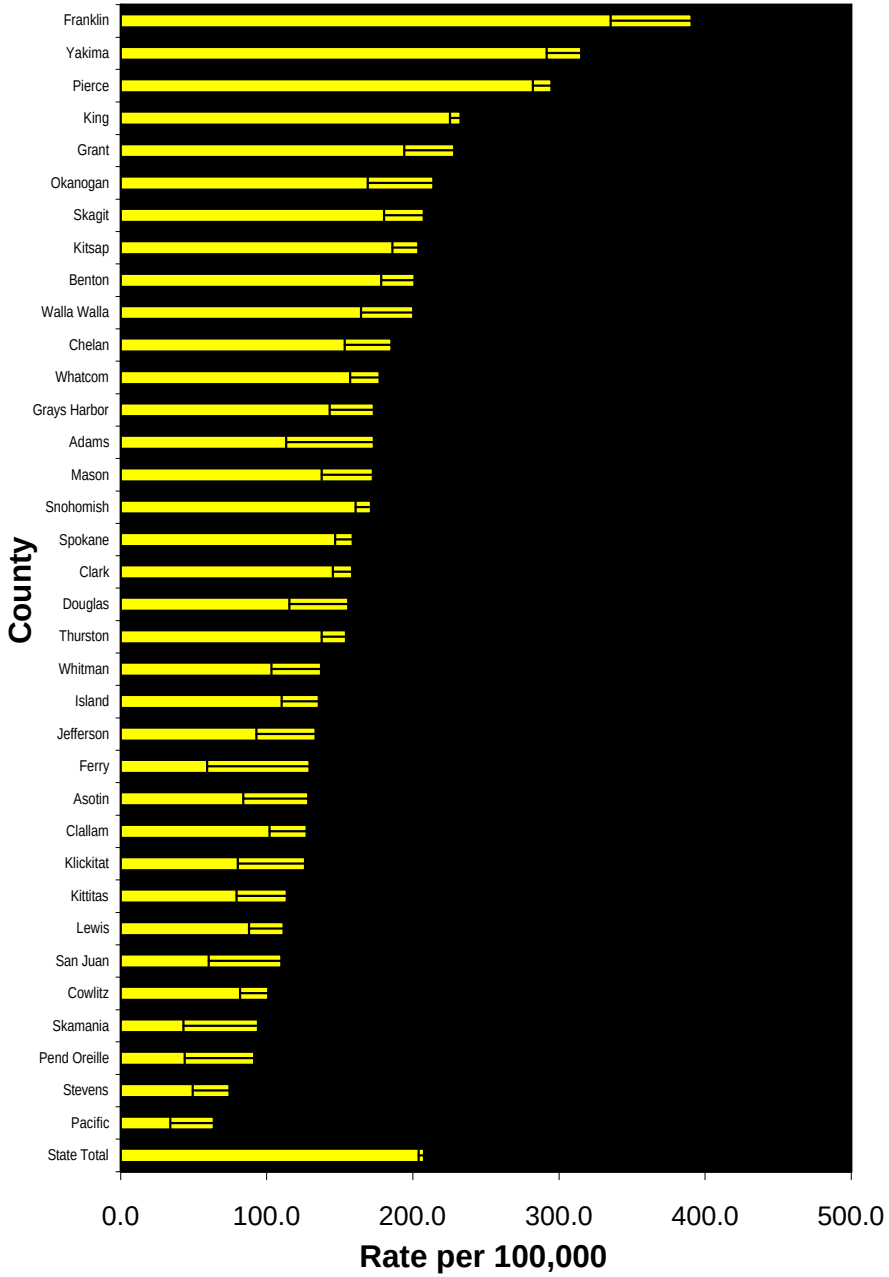
* Rates are not calculated from 0 to 4 cases because they are unreliable.

Numerator: Reported cases of Chlamydia

Denominator: Washington State Adjusted Population Estimates, DSHS, 1999

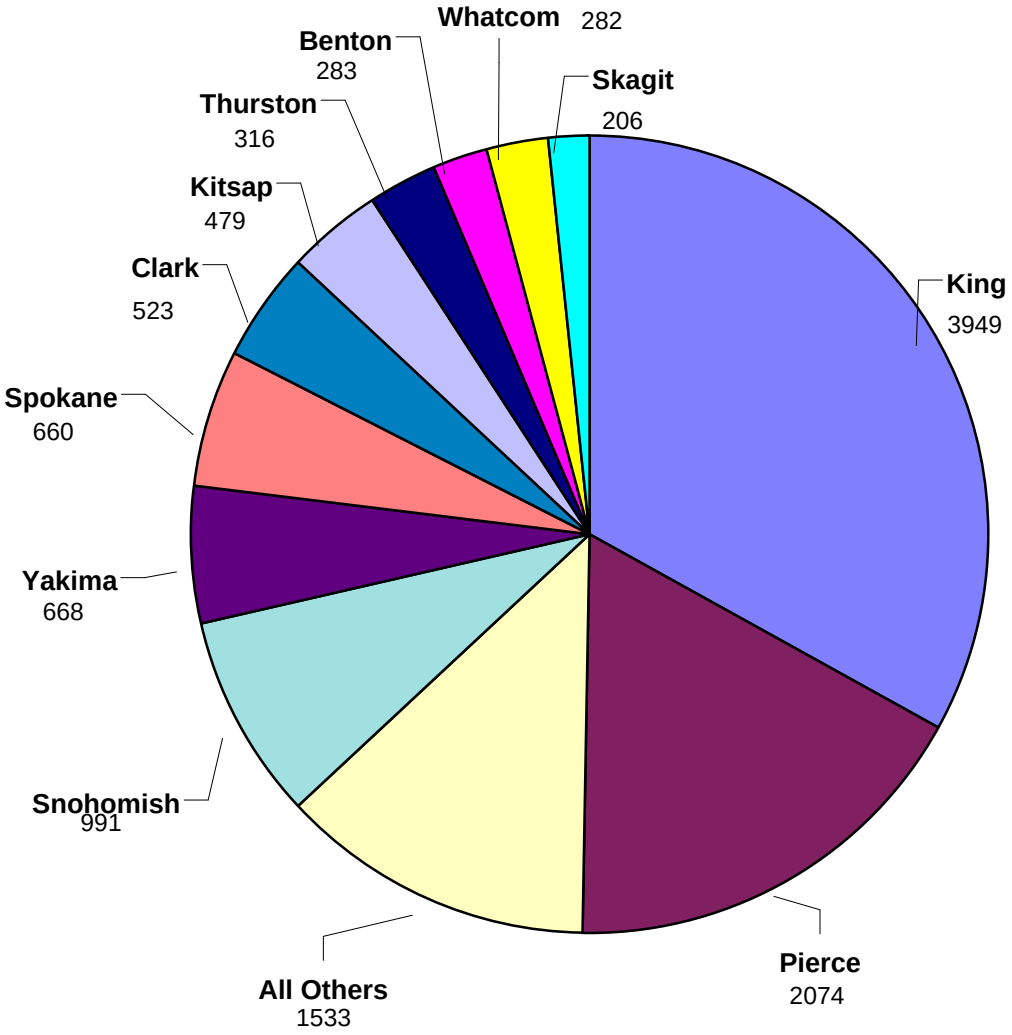
# Figure 5. Chlamydia Incidence Rates* by County,(95% CI)** Washington State, 1999 Ranked from Highest to Lowest




* This is the crude rate, not adjusted for age. Counties with fewer than 5 cases not shown. I—I = Confidence Interval

** 95% Confidence Intervals (CI) evaluate the influence of chance on the rate.

# Figure 6. Reported Chlamydia Cases by County of Residence, Washington State, 1999



## GONORRHEA

Infections due to *Neisseria gonorrhoeae* remain a major cause of morbidity in the United States. Negative sequelae of gonorrhea include PID, tubal infertility, ectopic pregnancy, and chronic pelvic pain. Epidemiologic studies provide strong evidence that gonococcal infections may facilitate HIV transmission, and biological studies have begun to elucidate the specific mechanisms through which this occurs.

*State-Level Gonorrhea Trends*

National gonorrhea rates have precipitously declined from 1974 to the present. The United States, as a whole, is on the way to achieving the Healthy People Year 2000 goal of 100 per 100,000 for gonorrhea incidence. Paralleling national trends, the Washington State gonorrhea incidence, as seen in Figure 7, exhibits the following significant trends or characteristics:

- Gonorrhea incidence has fallen 77.4% from 1988 to 1999
- Disease control efforts have , in part, been credited with the decrease
- Most gonorrhea cases are symptomatic and seek medical care, reported cases are considered to be an accurate reflection of true disease incidence
- Observed gonorrhea rates have remained consistently higher among African Americans than any other racial group
- Incidence peaks among males in the 20 – 24 age group and in the 15 – 19 age group for females
- The slight statewide increase from 1998 to 1999 is influenced by an outbreak in Pierce County, where the rate has increased 53.4% in the last year.

It remains to be determined whether the observed increase in Pierce County is an accurate measure of increased transmission, an artifact of improved surveillance or a combination of both and this increase warrants additional investigation . Similarly, an outbreak of gonorrhea beginning in 1998 among men who have sex with men (MSM) in Seattle-King County has also helped to widen the incidence rate gap between the genders by increasing the number of cases of gonorrhea among men. Gonococcal infections in MSM reported by the PHSKC STD clinic more than doubled from 1997 to 1998 and 19% of those cases were known to be infected with HIV. It has been estimated that the rate of gonococcal infection in MSM in King County increased from 180 per 100,000 in 1997 to 420 per 100,000 in 1999 in contrast to the rate among presumed heterosexuals in King County of 50 per 100,000 (MMWR, 1999).

The age distribution of gonorrhea also differs between genders and age groups as seen in Figure 8. Nationally, gonorrhea incidence for females peaks among 15-19 year olds and for males peaks among 20-24 year olds. Washington State reflected this trend in 1999. Among women, the peak incidence, 187.6 per 100,000, was among 15-19 year olds and peak gonorrhea incidence among men was found in the 20-24 year old age group. Contributing factors to the different age distributions of gonorrhea incidence among men and women are the age gap between men and women in sexual relationships as well as the previously noted outbreak among MSM whose median reported age was 32 (*ibid*.).

In Washington State, marked decreases in gonorrhea incidence have been seen across all racial and ethnic groups (Figure 9). The largest and most significant decrease has occurred among the African-American population, where the gonorrhea incidence rate has decreased 61.9% from 916.9 per 100,000 persons in 1993 to 348.6 per 100,000 in 1999. Rates have remained relatively stable at approximately that level through the most recent 4 report years. Though the decrease observed since 1993 is remarkable, racial disparities in disease burden clearly continue to exist. In contrast to chlamydial infection (Figure 3), which remains widely prevalent in all races and among those of Hispanic origin due to duration of infectiousness among those who are asymptomatic, gonococcal infection appears to have retreated deeper into core populations. In Washington State, 20.5% of reported cases of gonorrhea had missing race data and 24.6% of case reports were missing ethnicity data. Caution is ordinarily advised when interpreting incidence rates by race when a significant portion of cases are reported without this information. However, additional analysis of gonorrhea reports, assuming the unlikely event that all cases missing race information are white, yielded identical rankings by race as those presented in Figure 9.

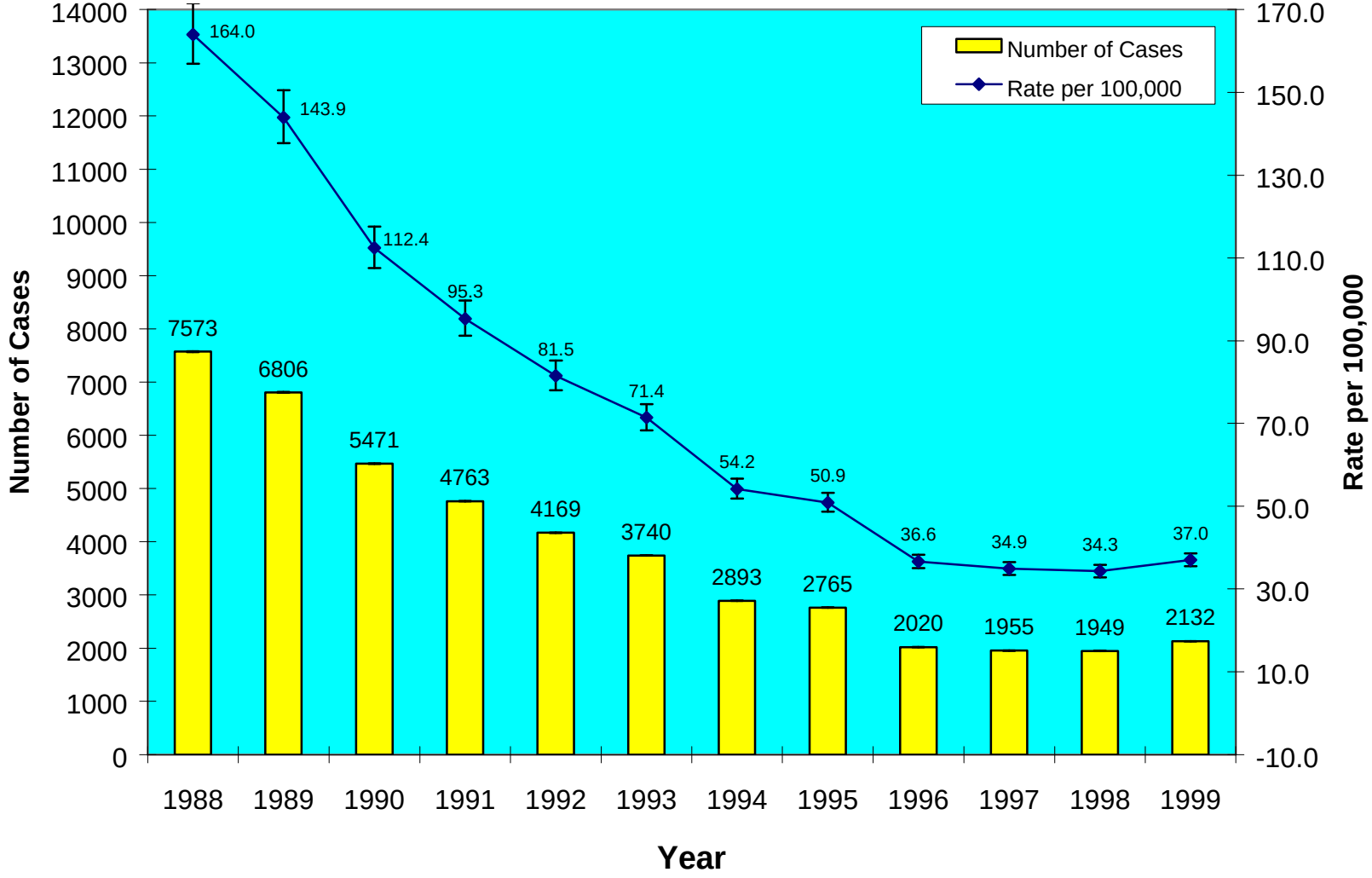
*County-Level Gonorrhea Trends*

The distribution of gonorrhea not only differs by gender, age, and race, as noted above, it also differs by geography. At the county-level, gonorrhea incidence impacts dense urban versus rural counties differently (Figures 9, 11, 12):

- Highest gonorrhea incidence rate is observed for Pierce County, 89.3 per 100,000
- King County has second highest observed rate at 54.3 per 100,000
- All other Washington counties exhibit less than half the incidence rate of Pierce or King counties.

To further illustrate the differences in gonorrhea disease burden across counties, gender-specific and age-specific rates were calculated. Gonorrhea incidence rates for males and females by county are presented in Table 3. For most counties in Washington State, there were either no gonorrhea cases or too few cases to calculate a stable incidence rate by gender. Among the 15 counties with enough cases to allow calculation of a gender-specific incidence rate, Pierce County has the highest rates for males and females at 80.2 per 100,000 and 98.5 per 100,000, respectively. King County had the highest number of cases among males (591) while Pierce County had the highest number of female cases reported (344) for the current report year.

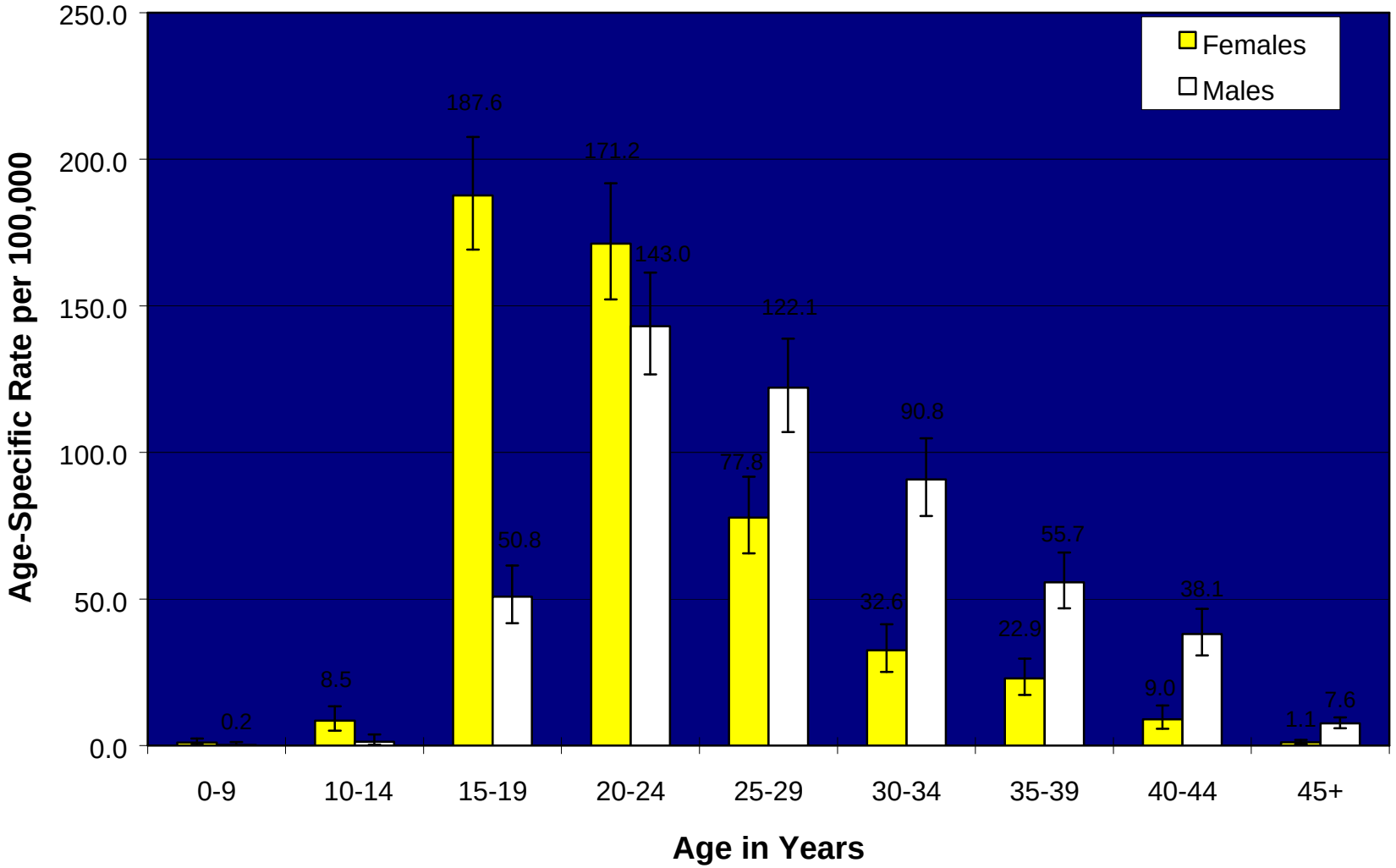
# Figure 7. Reported Gonorrhea Cases and Incidence Rates* (95% CI)**, Washington State, 1988-1999




* This is the crude rate, not adjusted for age. I—I = Confidence Interval

** 95% Confidence Intervals (CI) evaluate the influence of chance on the rate.

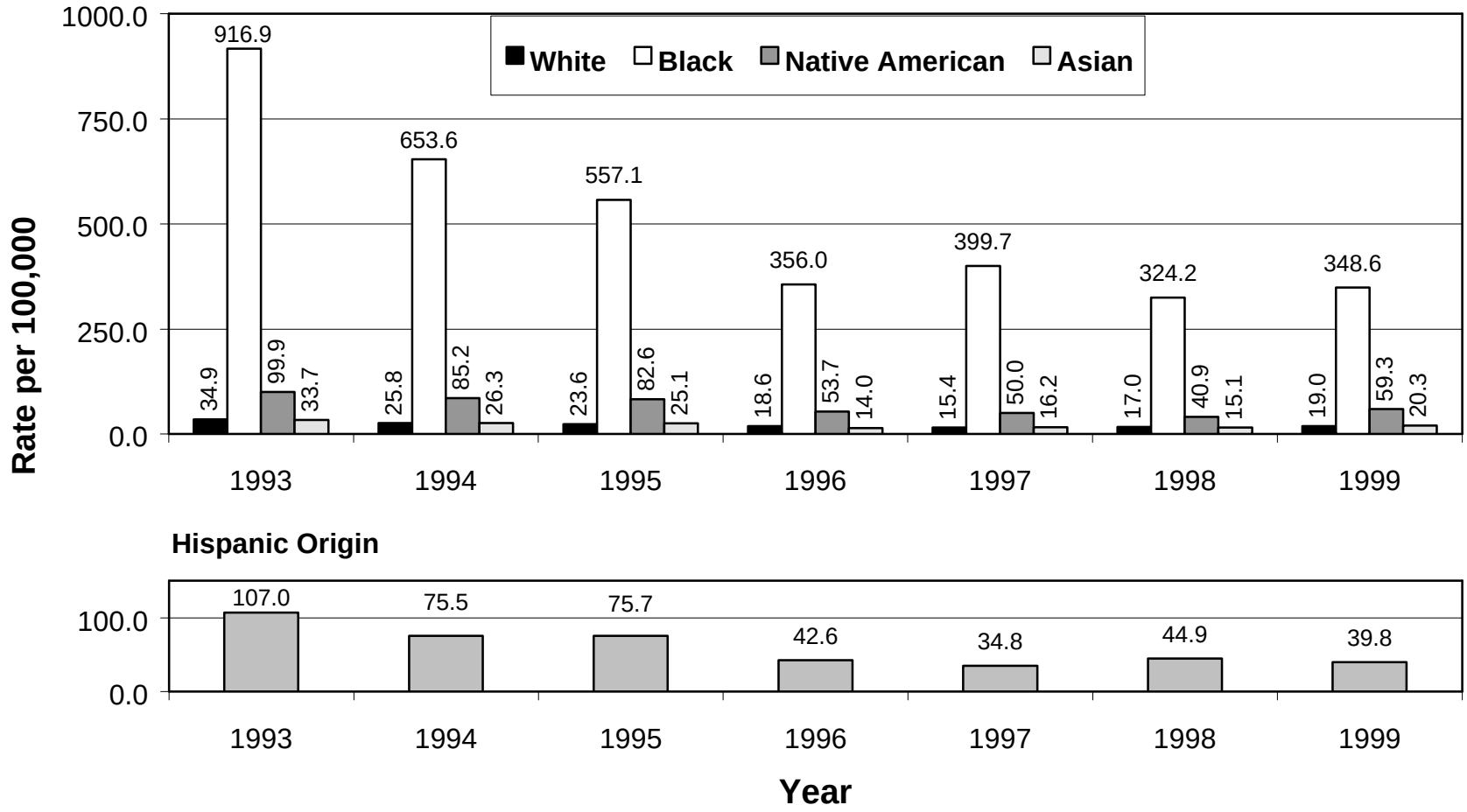
# Figure 8. Age-Specific Gonorrhea Rates* (95% CI)** by Gender, Washington State, 1999




* Age missing for 18 (1.8%) female cases and 22 (1.9%) male cases and excluded from calculated rate.

** 95% Confidence Intervals (CI) evaluate the influence of chance on the rate. I—I = Confidence Interval

# Figure 9. Gonorrhea Incidence Rates* by Race/Ethnicity**, Washington State, 1993-1999

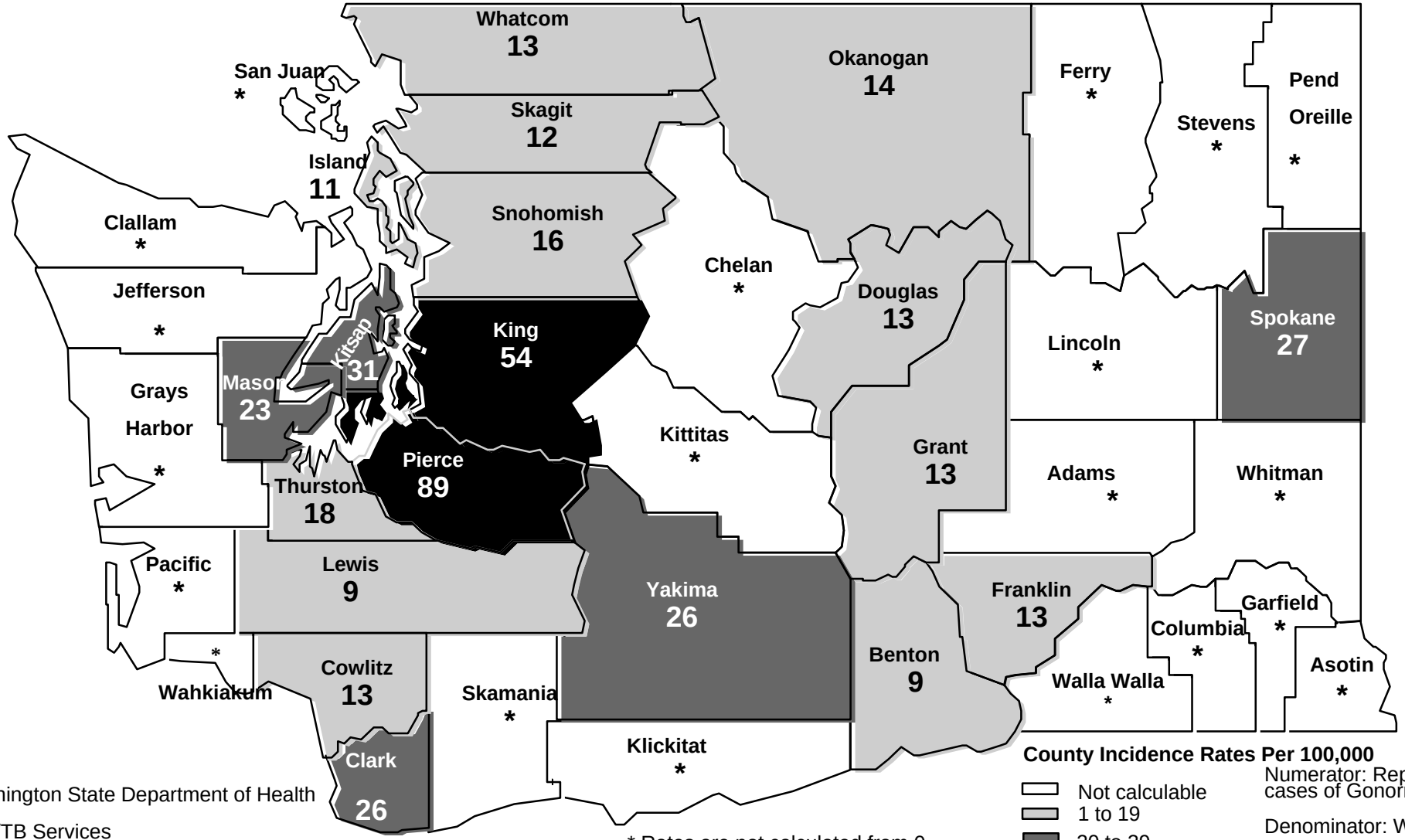



* This is the crude rate, not adjusted for age. Race data missing for 20.5% of cases; ethnicity data missing for 24.6% of cases. Because of missing data, comparisons between races/ethnicities are not advised.

** Race and ethnicity counted separately, e.g. a case can be both "White" and "Hispanic."

# Figure 10. Gonorrhea Incidence Rates By County

## Washington State/ 1999




Numerator: Reported cases of Gonorrhea

Denominator: Washington State Adjusted Population Estimates,DSHS 1999

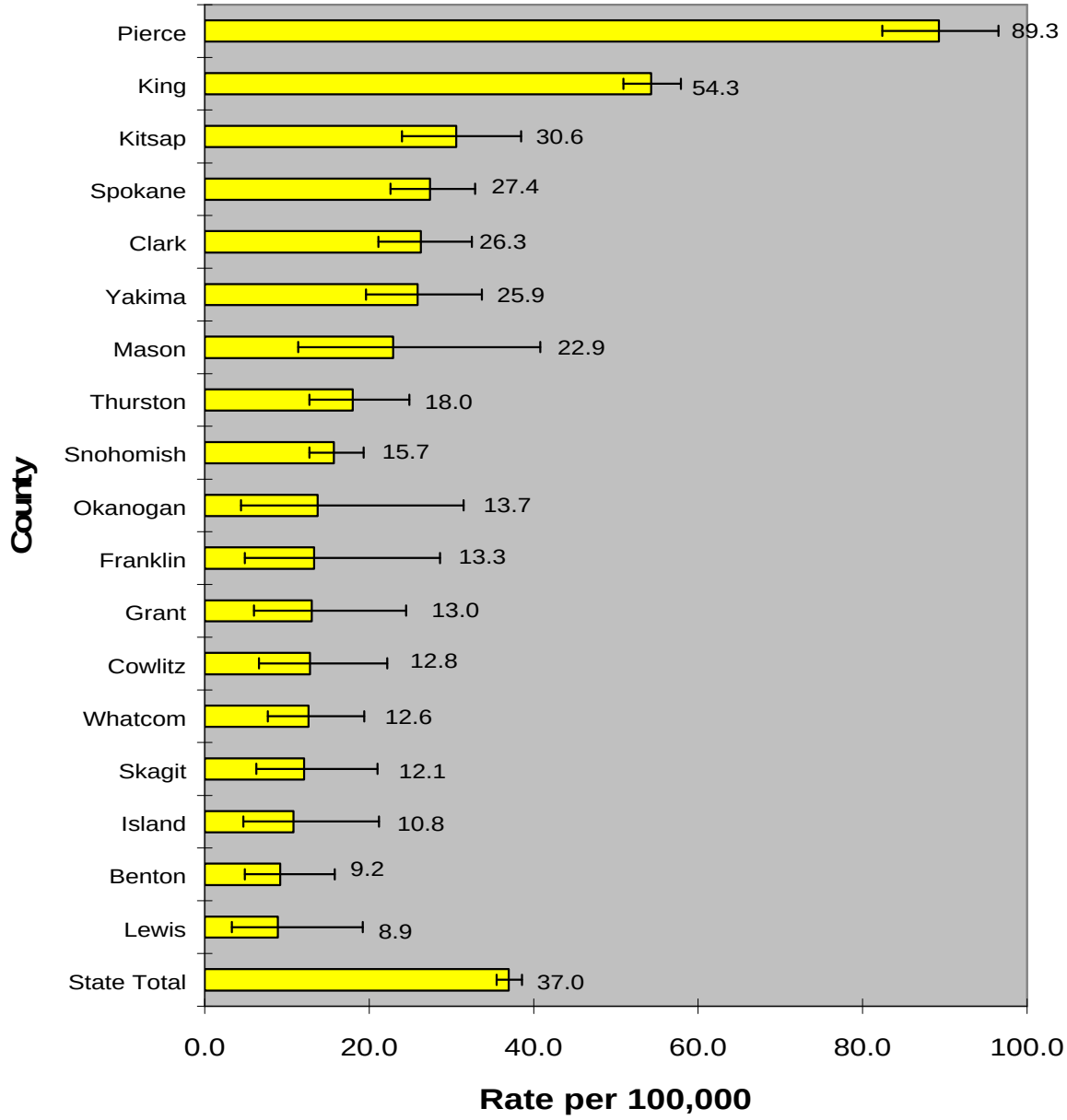
Washington State Department of Health

STD/TB Services

DRH Assessment Unit

* Rates are not calculated from 0 to 4 cases because they are unreliable.

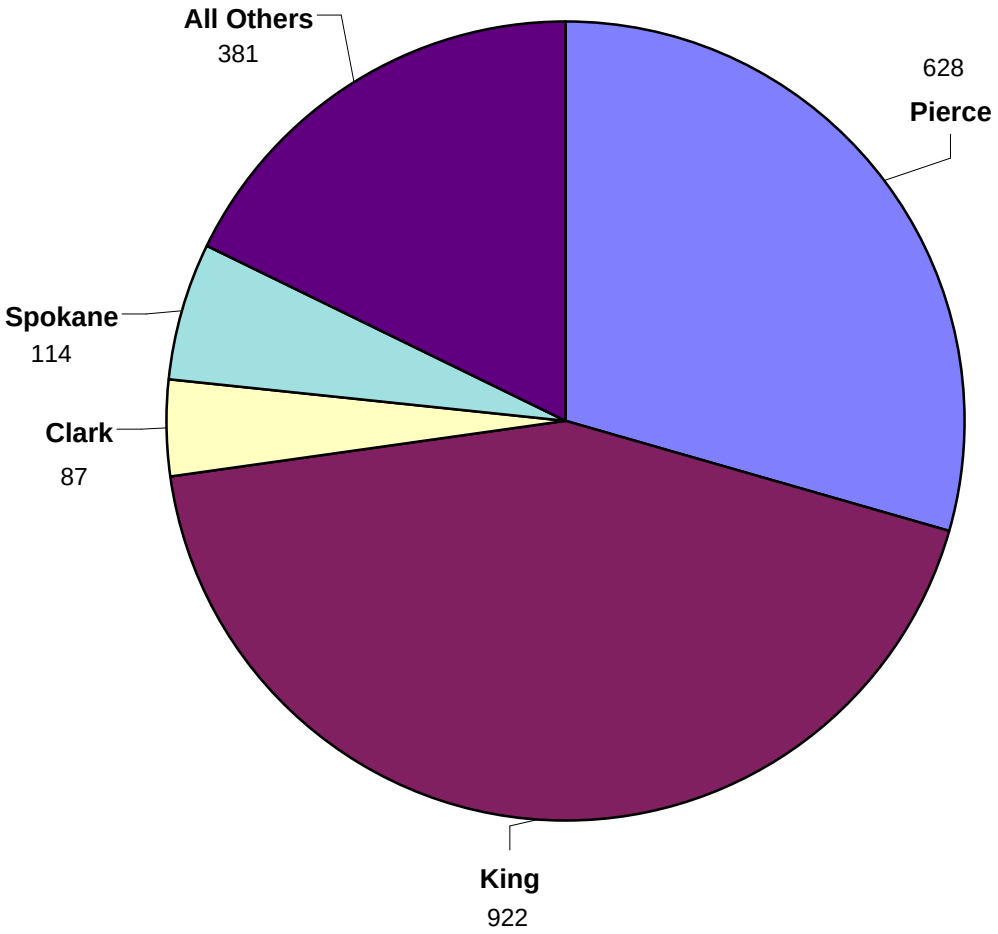
# Figure 11. Gonorrhea Incidence Rates* (95% CI)** by County, Washington State, 1999 Ranked from Highest to Lowest




* This is the crude rate, not adjusted for age. Counties with fewer than 5 cases not shown. I—I = Confidence Interval

** 95% Confidence Intervals (CI) evaluate the influence of chance on the rate.

# Figure 12. Reported Gonorrhea Cases by County of Residence, Washington State, 1999



## SYPHILIS

Syphilis infection has four distinct stages--primary, secondary, latent and tertiary. Primary syphilis infection is characterized by a painless genital ulcer which will resolve spontaneously without treatment. Secondary infection most commonly presents as a rash of varying duration and which may be recurrent. An infected person who does not get treatment may infect others during the first two stages (primary, secondary). Early latent syphilis is defined as an infection which is less than one year old and can be perinatally infectious or if a secondary relapse occurs. Trans-placental transmission of syphilis is a potential cause of fetal loss and congenital abnormalities. In the tertiary stage, untreated syphilis, although not contagious, can cause serious heart abnormalities, mental disorders, blindness, other neurological problems and death. All four stages of syphilis were reported in Washington State in the current report year (Figure 13).

*State-Level Syphilis Trends*

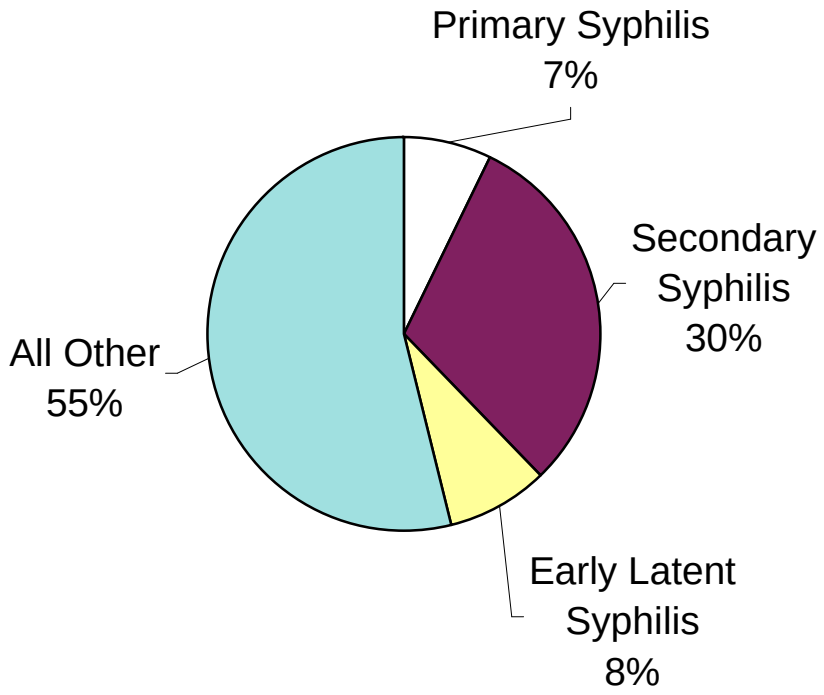
- Incidence rate for all stages of disease has increased 40% since 1998 from 2.5 per 100,000 to 3.5 per 100,000 in 1999
- This increase is largely due to an outbreak of syphilis among men who have sex with men in King County
- Lower proportion of Early Latent and Primary syphilis highlights the importance of screening and education to at-risk communities

Slightly less than 60% of the total syphilis incidence in Washington State in 1999 was reported from King County (Figure14, 15). This pattern has been observed since 1997 in contrast to previous report years where a greater proportion of cases were reported from counties other than King County. There continues to be a large disparity between male and female rates (Figure 16), which strongly suggests that the ongoing outbreak in Seattle-King County is somewhat different than the previous outbreak observed in the early 1990s.

In 1996, King County reported only a single case of P & S syphilis. By 1999, incidence had increased to 71 cases and this outbreak has been determined to be centered primarily among men who have sex with men. Public Health Seattle King County (PHSKC) has estimated that the annual rate of infectious syphilis among MSM increased from zero in 1996 to 90 per 100,000 in 1998 and has projected an annual rate of 200 per 100,000 for the 1999 report year. The annual infectious syphilis rate among HIV infected MSM was estimated at 1500 per 100,000 (MMWR, 1999). More revealing, two thirds of these cases were know to be HIV infected at the time of their syphilis diagnosis and most were in care for HIV at the time of their syphilis infection.. It has been proposed that the transmission behaviors responsible for this outbreak have occurred primarily in anonymous sex settings. These findings strongly reinforce the importance of routine STD screening for MSM in the primary care setting and an open dialog between patients and providers on the continuing risks posed by unprotected sexual activity.

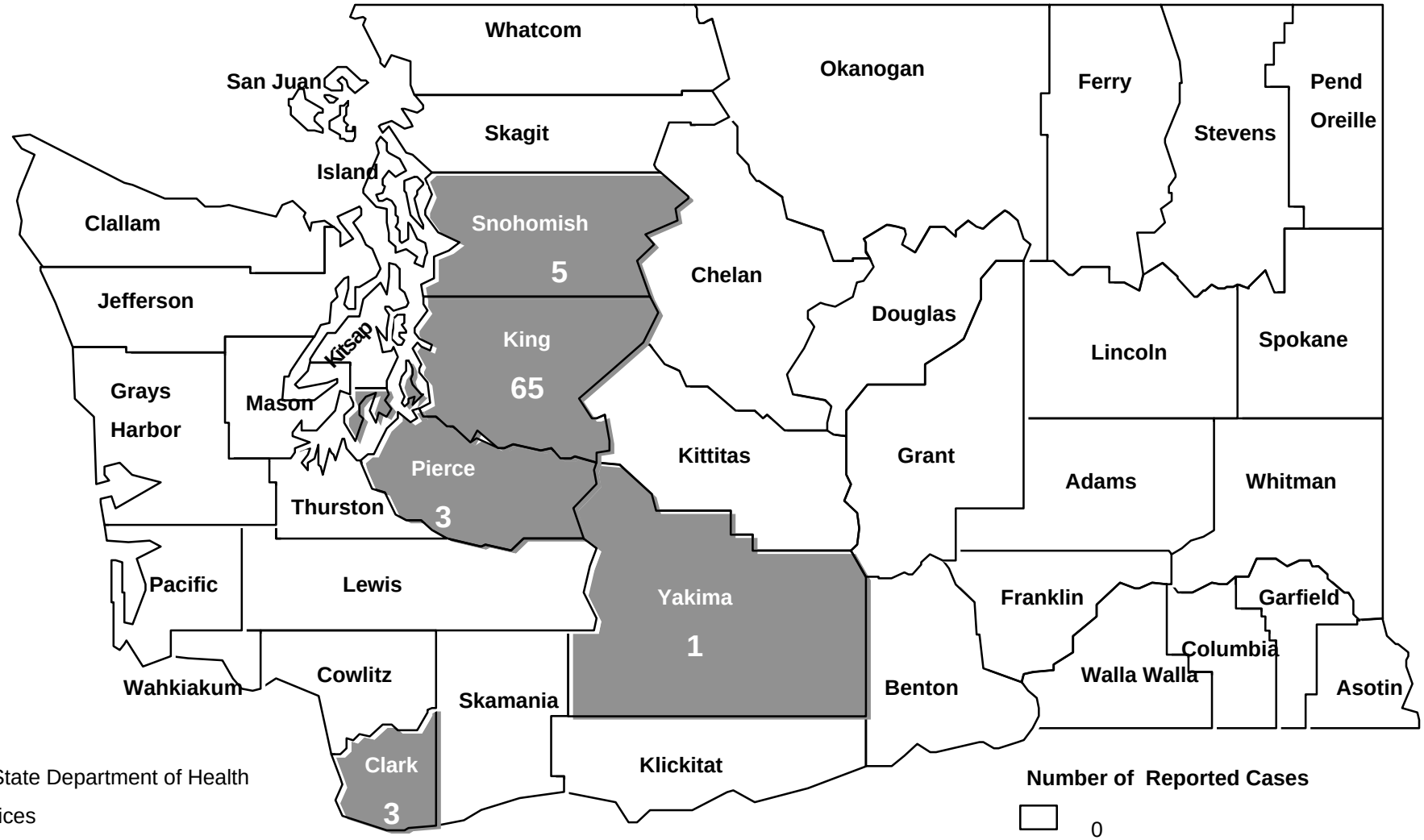
Reported cases of P & S and Early Latent have risen sharply to 94 since a low of 14 cases reported in 1996. Of note in Figure 12 is the relatively high proportion of secondary stage disease versus primary and early latent. The expected ratio would be approximately one to one in the relationship between P & S and Early Latent. The fact that there is a larger proportion of secondary disease suggests that for reasons discussed above there continues to be an unrecognized burden of disease and that continued surveillance, education and sustainable interventions are necessary for the control of infectious syphilis.

# Figure 13. Syphilis Cases by Disease Stage*, Washington State, 1999




*Reported syphilis cases, n=204

# Figure 14. Number of Primary and Secondary Syphilis Cases By County Washington State/ 1999

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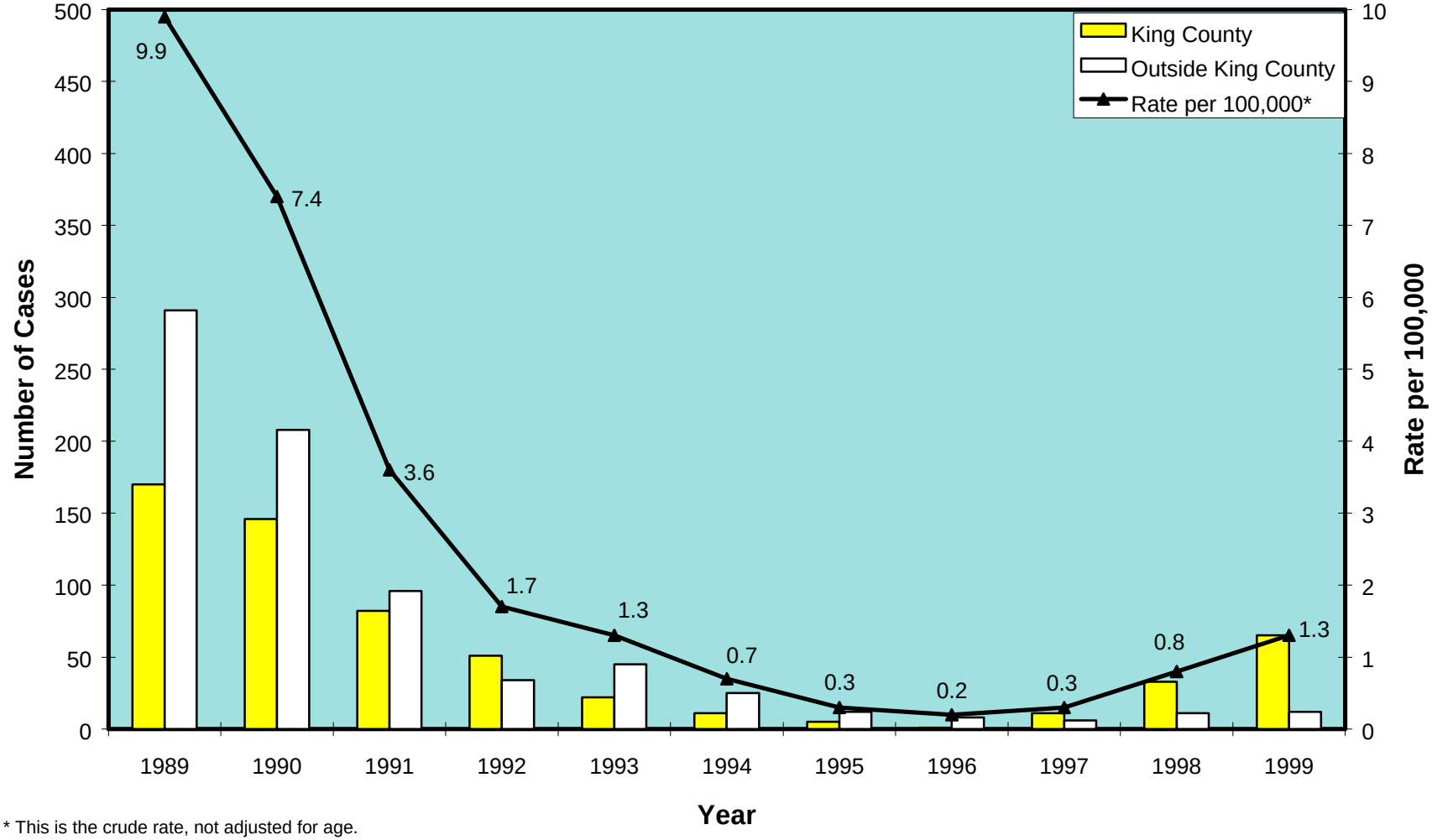
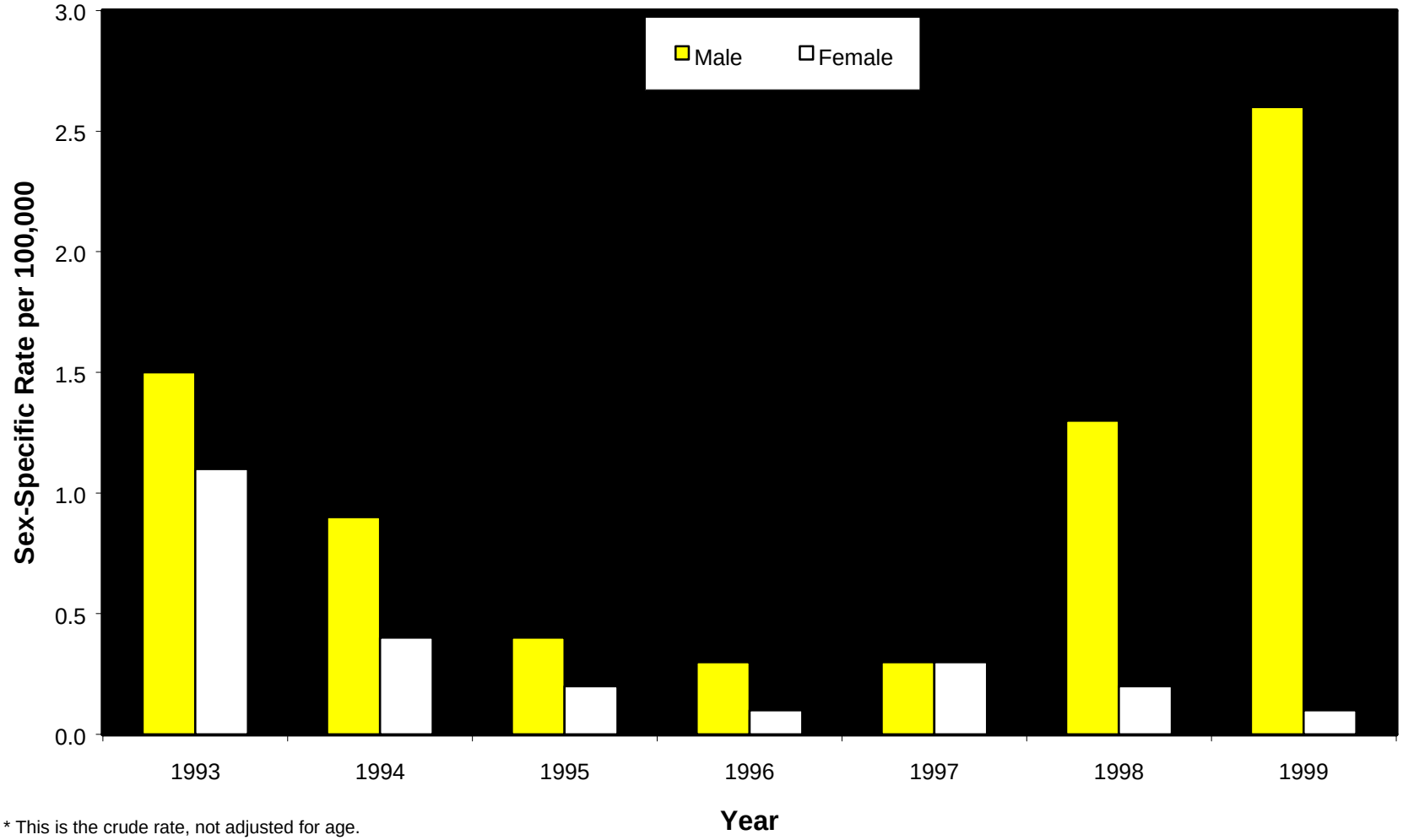
# Figure 15. Reported Primary & Secondary Syphilis Cases and Incidence Rates*, King County vs. Washington State, 1989-1999




* This is the crude rate, not adjusted for age.

# Figure 16. Primary & Secondary Syphilis Incidence Rates*, Males vs. Females, 1993-1999




* This is the crude rate, not adjusted for age.

## OTHER STDs

In addition to chlamydia, gonorrhea, and syphilis there are six additional STDs that are currently reportable to the state Department of Health. Initial genital herpes infection, nongonococcal urethritis (NGU), acute pelvic inflammatory disease (PID), chancroid, lymphogranuloma venereum (LGV), and granuloma inguinale (GI) currently require reporting by health care providers. It is proposed that, with the exception of herpes infection, these diseases be removed from the list of reportable conditions.

### *Nongonococcal Urethritis (NGU) and Pelvic Inflammatory Disease (PID)*

There are two gender-specific STDs, both syndromes, reported in Washington State - NGU for men and acute PID for women. NGU cases totaled 1,051 in 1999 with an estimated incidence rate of 36.6 per 100,000 males. The statewide acute PID incidence rate for females was 10.3 per 100,000 (297 cases). Similar to other STDs in Washington State, NGU and acute PID cases are concentrated in the large, urban population centers of the state--King, Pierce, Snohomish, Clark, Kitsap, Spokane and Yakima counties (Table 5). Both diseases are considered to be under-diagnosed and under-reported; therefore, caution should be used when interpreting these data.

### *Genital Herpes, Initial Infection*

Washington State is one of a handful of states that has reporting of genital herpes. Only the initial infection is tracked in the state surveillance system. In 1999, 1,953 cases of initial herpes infection were reported (33.9 per 100,000 persons). Unlike chlamydia and gonorrhea, a suspected herpes infection does not require laboratory confirmation in order for the case to be reported to the state health department. Given recent CDC estimates of genital herpes prevalence in the United States (CDC, 1998), cases of initial genital herpes reported in Washington State are probably an underestimation of true incidence.

### *Others*

Chancroid, LGV, and GI are very rare STDs. Only 20 states reported any cases of chancroid in 1998, with four states reporting 71% of the total 189 cases. Two chancroid cases were reported in Washington State in 1997, one in 1998, and no cases were reported in 1999. No cases of LGV or GI were reported in 1999.

**STATE OF WASHINGTON**
**STD MORBIDITY REPORT - 1999**
**REPORTED CHLAMYDIA CASES AND INCIDENCE RATES**
**BY SEX AND COUNTY**

## Table 1

| | 1999 POPULATION | | CHLAMYDIA | | | |
|---|---|---|---|---|---|---|
| **COUNTY** | **MALE** | **FEMALE** | **MALE** | **RATE/100,000** | **FEMALE** | **RATE/100,000** |
| Adams | 7,534 | 7,474 | 4 | * | 22 | 294 |
| Asotin | 9,774 | 10,462 | 4 | * | 22 | 210 |
| Benton | 69,593 | 71,078 | 31 | 45 | 252 | 355 |
| Chelan | 31,129 | 31,987 | 24 | 77 | 93 | 291 |
| Clallam | 33,048 | 33,666 | 9 | 27 | 76 | 226 |
| Clark | 162,793 | 167,453 | 132 | 81 | 391 | 233 |
| Columbia | 1,949 | 2,031 | 0 | * | 2 | * |
| Cowlitz | 46,506 | 47,480 | 7 | 15 | 88 | 185 |
| Douglas | 15,648 | 15,776 | 7 | 45 | 42 | 266 |
| Ferry | 3,594 | 3,369 | 1 | * | 8 | 237 |
| Franklin | 22,790 | 22,240 | 33 | 145 | 143 | 643 |
| Garfield | 1,028 | 1,072 | 0 | * | 0 | * |
| Grant | 34,363 | 34,843 | 23 | 67 | 135 | 387 |
| Grays Harbor | 33,653 | 33,339 | 24 | 71 | 92 | 276 |
| Island | 38,187 | 35,586 | 25 | 65 | 75 | 211 |
| Jefferson | 13,130 | 13,105 | 11 | 84 | 24 | 183 |
| King | 843,831 | 853,846 | 1,295 | 153 | 2,654 | 311 |
| Kitsap | 119,752 | 115,400 | 110 | 92 | 369 | 320 |
| Kittitas | 15,173 | 15,603 | 11 | 72 | 24 | 154 |
| Klickitat | 9,072 | 9,141 | 4 | * | 19 | 208 |
| Lewis | 33,338 | 33,897 | 17 | 51 | 58 | 171 |
| Lincoln | 4,341 | 4,266 | 0 | * | 4 | * |
| Mason | 24,549 | 23,530 | 18 | 73 | 65 | 276 |
| Okanogan | 18,221 | 18,217 | 19 | 104 | 59 | 324 |
| Pacific | 10,010 | 10,378 | 1 | * | 12 | 116 |
| Pend Oreille | 5,505 | 5,434 | 1 | * | 9 | 166 |
| Pierce | 354,184 | 349,397 | 559 | 158 | 1,515 | 434 |
| San Juan | 6,363 | 6,370 | 1 | * | 13 | 204 |
| Skagit | 48,969 | 50,303 | 41 | 84 | 165 | 328 |
| Skamania | 4,814 | 4,764 | 2 | * | 7 | 147 |
| Snohomish | 288,631 | 290,335 | 252 | 87 | 739 | 255 |
| Spokane | 205,093 | 210,619 | 161 | 79 | 499 | 237 |
| Stevens | 18,009 | 18,203 | 5 | 28 | 22 | 121 |
| Thurston | 100,328 | 104,748 | 67 | 67 | 249 | 238 |
| Wahkiakum | 1,800 | 1,863 | 1 | * | 3 | * |
| Walla Walla | 27,645 | 26,761 | 24 | 87 | 85 | 318 |
| Whatcom | 78,473 | 80,746 | 52 | 66 | 230 | 285 |
| Whitman | 20,603 | 19,543 | 18 | 87 | 37 | 189 |
| Yakima | 104,821 | 107,187 | 88 | 84 | 580 | 541 |
| **STATE TOTAL** | **2,868,244** | **2,891,512** | **3,082** | **107** | **8,882** | **307** |

*Rates are not calculated from 0 to 4 cases because they are unreliable.

**STATE OF WASHINGTON**
**STD MORBIDITY REPORT - 1999**
**REPORTED CHLAMYDIA CASES AND INCIDENCE RATES**
**BY AGE (15-24 YEARS) AND COUNTY**

## Table 2

| | 1999 POPULATION | | | CHLAMYDIA | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| COUNTY | 15-17 | 18-19 | 20-24 | 15-17 | RATE/100,00 | 18-19 | RATE/100,00 | 20-24 | RATE/100,000 |
| Adams | 877 | 410 | 848 | 5 | 570 | 4 | * | 8 | 943 |
| Asotin | 976 | 498 | 1,008 | 7 | 717 | 8 | 1,606 | 7 | 694 |
| Benton | 6,803 | 3,686 | 7,298 | 62 | 911 | 63 | 1,709 | 97 | 1,329 |
| Chelan | 2,648 | 1,630 | 2,941 | 24 | 906 | 21 | 1,288 | 34 | 1,156 |
| Clallam | 2,769 | 1,485 | 2,997 | 25 | 903 | 17 | 1,145 | 22 | 734 |
| Clark | 15,337 | 9,060 | 19,490 | 97 | 632 | 104 | 1,148 | 184 | 944 |
| Columbia | 192 | 89 | 203 | 0 | * | 1 | * | 1 | * |
| Cowlitz | 4,133 | 2,696 | 4,691 | 15 | 363 | 29 | 1,076 | 22 | 469 |
| Douglas | 1,468 | 808 | 1,537 | 12 | 817 | 11 | 1,361 | 17 | 1,106 |
| Ferry | 383 | 220 | 444 | 3 | * | 5 | 2,273 | 0 | * |
| Franklin | 2,357 | 1,370 | 2,642 | 33 | 1,400 | 27 | 1,971 | 73 | 2,763 |
| Garfield | 141 | 14 | 91 | 0 | * | 0 | * | 0 | * |
| Grant | 3,367 | 1,973 | 3,654 | 30 | 891 | 42 | 2,129 | 46 | 1,259 |
| Grays Harbor | 3,120 | 1,723 | 3,379 | 42 | 1,346 | 21 | 1,219 | 34 | 1,006 |
| Island | 2,820 | 1,718 | 6,128 | 2 | * | 20 | 1,164 | 56 | 914 |
| Jefferson | 1,106 | 483 | 1,160 | 4 | * | 13 | 2,692 | 10 | 862 |
| King | 67,111 | 42,212 | 95,291 | 627 | 934 | 666 | 1,578 | 1,210 | 1,270 |
| Kitsap | 9,971 | 6,703 | 16,105 | 82 | 822 | 90 | 1,343 | 183 | 1,136 |
| Kittitas | 1,523 | 2,671 | 4,705 | 2 | * | 6 | 225 | 15 | 319 |
| Klickitat | 964 | 419 | 914 | 3 | * | 6 | 1,432 | 10 | 1,094 |
| Lewis | 3,454 | 1,940 | 3,426 | 13 | 376 | 10 | 515 | 28 | 817 |
| Lincoln | 495 | 122 | 424 | 2 | * | 0 | * | 1 | * |
| Mason | 2,266 | 1,238 | 2,666 | 19 | 838 | 15 | 1,212 | 22 | 825 |
| Okanogan | 1,829 | 867 | 1,847 | 19 | 1,039 | 23 | 2,653 | 18 | 975 |
| Pacific | 897 | 381 | 895 | 8 | 892 | 2 | * | 1 | * |
| Pend Oreille | 574 | 220 | 558 | 4 | * | 2 | * | 2 | * |
| Pierce | 29,603 | 22,142 | 52,879 | 349 | 1,179 | 459 | 2,073 | 712 | 1,346 |
| San Juan | 550 | 129 | 453 | 6 | 1,091 | 1 | * | 2 | * |
| Skagit | 4,139 | 2,501 | 4,719 | 44 | 1,063 | 49 | 1,959 | 61 | 1,293 |
| Skamania | 502 | 264 | 493 | 4 | * | 1 | * | 2 | * |
| Snohomish | 25,030 | 15,677 | 31,259 | 195 | 779 | 185 | 1,180 | 339 | 1,084 |
| Spokane | 18,073 | 13,186 | 30,158 | 112 | 620 | 139 | 1,054 | 225 | 746 |
| Stevens | 2,199 | 856 | 1,954 | 4 | * | 11 | 1,285 | 8 | 409 |
| Thurston | 9,200 | 5,758 | 11,815 | 52 | 565 | 70 | 1,216 | 110 | 931 |
| Wahkiakum | 174 | 88 | 181 | 0 | * | 2 | * | 1 | * |
| Walla Walla | 2,553 | 2,569 | 4,528 | 32 | 1,253 | 24 | 934 | 37 | 817 |
| Whatcom | 7,405 | 5,930 | 13,429 | 50 | 675 | 59 | 995 | 108 | 804 |
| Whitman | 1,232 | 4,719 | 9,245 | 3 | * | 10 | 212 | 35 | 379 |
| Yakima | 9,800 | 6,379 | 11,076 | 120 | 1,224 | 114 | 1,787 | 239 | 2,158 |
| **STATE TOTAL** | **248,041** | **164,834** | **357,531** | **2,111** | **851** | **2,330** | **1,414** | **3,980** | **1,113** |

*Rates are not calculated from 0 to 4 cases because they are unreliable.

**STATE OF WASHINGTON**
**STD MORBIDITY REPORT - 1999**
**REPORTED GONORRHEA CASES AND INCIDENCE RATES**
**BY SEX AND COUNTY**

## Table 3

| | 1999POPULATION | | GONORRHEA | | | |
|---|---|---|---|---|---|---|
| **COUNTY** | **MALE** | **FEMALE** | **MALE** | **RATE/100,000** | **FEMALE** | **RATE/100,000** |
| Adams | 7,534 | 7,474 | 0 | * | 1 | * |
| Asotin | 9,774 | 10,462 | 0 | * | 0 | * |
| Benton | 69,593 | 71,078 | 5 | 7 | 8 | 11 |
| Chelan | 31,129 | 31,987 | 2 | * | 2 | * |
| Clallam | 33,048 | 33,666 | 1 | * | 2 | * |
| Clark | 162,793 | 167,453 | 34 | 21 | 53 | 32 |
| Columbia | 1,949 | 2,031 | 0 | * | 0 | * |
| Cowlitz | 46,506 | 47,480 | 4 | * | 8 | 17 |
| Douglas | 15,648 | 15,776 | 1 | * | 1 | * |
| Ferry | 3,594 | 3,369 | 0 | * | 0 | * |
| Franklin | 22,790 | 22,240 | 2 | * | 4 | * |
| Garfield | 1,028 | 1,072 | 0 | * | 0 | * |
| Grant | 34,363 | 34,843 | 3 | * | 6 | 17 |
| Grays Harbor | 33,653 | 33,339 | 1 | * | 2 | * |
| Island | 38,187 | 35,586 | 5 | 13 | 3 | * |
| Jefferson | 13,130 | 13,105 | 0 | * | 1 | * |
| King | 843,831 | 853,846 | 591 | 70 | 331 | 39 |
| Kitsap | 119,752 | 115,400 | 35 | 29 | 37 | 32 |
| Kittitas | 15,173 | 15,603 | 0 | * | 2 | * |
| Klickitat | 9,072 | 9,141 | 0 | * | 1 | * |
| Lewis | 33,338 | 33,897 | 3 | * | 3 | * |
| Lincoln | 4,341 | 4,266 | 0 | * | 0 | * |
| Mason | 24,549 | 23,530 | 7 | 29 | 4 | * |
| Okanogan | 18,221 | 18,217 | 2 | * | 3 | * |
| Pacific | 10,010 | 10,378 | 0 | * | 0 | * |
| Pend Oreille | 5,505 | 5,434 | 0 | * | 0 | * |
| Pierce | 354,184 | 349,397 | 284 | 80 | 344 | 98 |
| San Juan | 6,363 | 6,370 | 0 | * | 0 | * |
| Skagit | 48,969 | 50,303 | 3 | * | 9 | 18 |
| Skamania | 4,814 | 4,764 | 0 | * | 0 | * |
| Snohomish | 288,631 | 290,335 | 43 | 15 | 48 | 17 |
| Spokane | 205,093 | 210,619 | 46 | 22 | 68 | 32 |
| Stevens | 18,009 | 18,203 | 0 | * | 4 | * |
| Thurston | 100,328 | 104,748 | 16 | 16 | 21 | 20 |
| Wahkiakum | 1,800 | 1,863 | 0 | * | 0 | * |
| Walla Walla | 27,645 | 26,761 | 0 | * | 0 | * |
| Whatcom | 78,473 | 80,746 | 11 | 14 | 9 | 11 |
| Whitman | 20,603 | 19,543 | 1 | * | 2 | * |
| Yakima | 104,821 | 107,187 | 23 | 22 | 32 | 30 |
| **STATE TOTAL** | **2,868,244** | **2,891,512** | **1,123** | **39** | **1,009** | **35** |

*Rates are not calculated from 0 to 4 cases because they are unreliable .

**STATE OF WASHINGTON**
**STD MORBIDITY REPORT - 1999**
**REPORTED GONORRHEA CASES AND INCIDENCE RATES**
**BY AGE (15-24 YEARS) AND COUNTY**

## Table 4

| | 1999 POPULATION | | | GONORRHEA | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| COUNTY | 15-17 | 18-19 | 20-24 | 15-17 | RATE/100,000 | 18-19 | RATE/100,00 | 20-24 | RATE/100,000 |
| Adams | 877 | 410 | 848 | 0 | * | 0 | * | 1 | * |
| Asotin | 976 | 498 | 1,008 | 0 | * | 0 | * | 0 | * |
| Benton | 6,803 | 3,686 | 7,298 | 0 | * | 2 | * | 4 | * |
| Chelan | 2,648 | 1,630 | 2,941 | 0 | * | 1 | * | 1 | * |
| Clallam | 2,769 | 1,485 | 2,997 | 1 | * | 0 | * | 0 | * |
| Clark | 15,337 | 9,060 | 19,490 | 17 | 111 | 16 | 177 | 27 | 139 |
| Columbia | 192 | 89 | 203 | 0 | * | 0 | * | 0 | * |
| Cowlitz | 4,133 | 2,696 | 4,691 | 2 | * | 1 | * | 3 | * |
| Douglas | 1,468 | 808 | 1,537 | 0 | * | 0 | * | 1 | * |
| Ferry | 383 | 220 | 444 | 0 | * | 0 | * | 0 | * |
| Franklin | 2,357 | 1,370 | 2,642 | 0 | * | 0 | * | 2 | * |
| Garfield | 141 | 14 | 91 | 0 | * | 0 | * | 0 | * |
| Grant | 3,367 | 1,973 | 3,654 | 2 | * | 2 | * | 2 | * |
| Grays Harbor | 3,120 | 1,723 | 3,379 | 1 | * | 1 | * | 0 | * |
| Island | 2,820 | 1,718 | 6,128 | 0 | * | 2 | * | 3 | * |
| Jefferson | 1,106 | 483 | 1,160 | 0 | * | 0 | * | 0 | * |
| King | 67,111 | 42,212 | 95,291 | 78 | 116 | 88 | 208 | 208 | 218 |
| Kitsap | 9,971 | 6,703 | 16,105 | 12 | 120 | 11 | 164 | 28 | 174 |
| Kittitas | 1,523 | 2,671 | 4,705 | 0 | * | 1 | * | 1 | * |
| Klickitat | 964 | 419 | 914 | 0 | * | 0 | * | 1 | * |
| Lewis | 3,454 | 1,940 | 3,426 | 1 | * | 0 | * | 1 | * |
| Lincoln | 495 | 122 | 424 | 0 | * | 0 | * | 0 | * |
| Mason | 2,266 | 1,238 | 2,666 | 0 | * | 1 | * | 3 | * |
| Okanogan | 1,829 | 867 | 1,847 | 1 | * | 1 | * | 0 | * |
| Pacific | 897 | 381 | 895 | 0 | * | 0 | * | 0 | * |
| Pend Oreille | 574 | 220 | 558 | 0 | * | 0 | * | 0 | * |
| Pierce | 29,603 | 22,142 | 52,879 | 76 | 257 | 96 | 434 | 174 | 329 |
| San Juan | 550 | 129 | 453 | 0 | * | 0 | * | 0 | * |
| Skagit | 4,139 | 2,501 | 4,719 | 3 | * | 4 | * | 2 | * |
| Skamania | 502 | 264 | 493 | 0 | * | 0 | * | 0 | * |
| Snohomish | 25,030 | 15,677 | 31,259 | 8 | 32 | 12 | 77 | 28 | 90 |
| Spokane | 18,073 | 13,186 | 30,158 | 15 | 83 | 21 | 159 | 25 | 83 |
| Stevens | 2,199 | 856 | 1,954 | 0 | * | 2 | * | 2 | * |
| Thurston | 9,200 | 5,758 | 11,815 | 3 | * | 7 | 122 | 11 | 93 |
| Wahkiakum | 174 | 88 | 181 | 0 | * | 0 | * | 0 | * |
| Walla Walla | 2,553 | 2,569 | 4,528 | 0 | * | 0 | * | 0 | * |
| Whatcom | 7,405 | 5,930 | 13,429 | 1 | * | 2 | * | 9 | 67 |
| Whitman | 1,232 | 4,719 | 9,245 | 0 | * | 1 | * | 1 | * |
| Yakima | 9,800 | 6,379 | 11,076 | 8 | 82 | 8 | 125 | 16 | 144 |
| **STATE TOTAL** | **248,041** | **164,834** | **357,531** | **229** | **92** | **280** | **170** | **554** | **155** |

*Rates are not calculated from 0 to 4 cases because they are unreliable.

**STATE OF WASHINGTON**
**STD MORBIDITY REPORT - 1999**
**REPORTED STD CASES AND INCIDENCE RATES BY DISEASE AND COUNTY**

## Table 5

| | | CHLAMYDIA | | | GONORRHEA | | |
|---|---|---|---|---|---|---|---|
| **COUNTY** | **POPULATION** | **CASES** | **RATE/100,000** | **RANK** | **CASES** | **RATE/100,000** | **RANK** |
| Adams | 15,008 | 26 | 173 | 14 | 1 | * | * |
| Asotin | 20,236 | 26 | 128 | 25 | 0 | * | * |
| Benton | 140,671 | 283 | 201 | 9 | 13 | 9 | 17 |
| Chelan | 63,116 | 117 | 185 | 11 | 4 | * | * |
| Clallam | 66,714 | 85 | 127 | 26 | 3 | * | * |
| Clark | 330,246 | 523 | 158 | 18 | 87 | 26 | 5 |
| Columbia | 3,980 | 2 | * | * | 0 | * | * |
| Cowlitz | 93,986 | 95 | 101 | 31 | 12 | 13 | 12 |
| Douglas | 31,424 | 49 | 156 | 19 | 2 | * | * |
| Ferry | 6,963 | 9 | 129 | 24 | 0 | * | * |
| Franklin | 45,030 | 176 | 391 | 1 | 6 | 13 | 14 |
| Garfield | 2,100 | 0 | * | * | 0 | * | * |
| Grant | 69,206 | 158 | 228 | 5 | 9 | 13 | 13 |
| Grays Harbor | 66,992 | 116 | 173 | 13 | 3 | * | * |
| Island | 73,773 | 100 | 136 | 22 | 8 | 11 | 16 |
| Jefferson | 26,235 | 35 | 133 | 23 | 1 | * | * |
| King | 1,697,677 | 3,949 | 233 | 4 | 922 | 54 | 2 |
| Kitsap | 235,152 | 479 | 204 | 8 | 72 | 31 | 3 |
| Kittitas | 30,776 | 35 | 114 | 28 | 2 | * | * |
| Klickitat | 18,213 | 23 | 126 | 27 | 1 | * | * |
| Lewis | 67,235 | 75 | 112 | 29 | 6 | 9 | 18 |
| Lincoln | 8,607 | 4 | * | * | 0 | * | * |
| Mason | 48,079 | 83 | 173 | 15 | 11 | 23 | 7 |
| Okanogan | 36,438 | 78 | 214 | 6 | 5 | 14 | 10 |
| Pacific | 20,388 | 13 | 64 | 35 | 0 | * | * |
| Pend Oreille | 10,939 | 10 | 91 | 33 | 0 | * | * |
| Pierce | 703,581 | 2,074 | 295 | 3 | 628 | 89 | 1 |
| San Juan | 12,733 | 14 | 110 | 30 | 0 | * | * |
| Skagit | 99,272 | 206 | 208 | 7 | 12 | 12 | 15 |
| Skamania | 9,578 | 9 | 94 | 32 | 0 | * | * |
| Snohomish | 578,966 | 991 | 171 | 16 | 91 | 16 | 9 |
| Spokane | 415,712 | 660 | 159 | 17 | 114 | 27 | 4 |
| Stevens | 36,212 | 27 | 75 | 34 | 4 | * | * |
| Thurston | 205,076 | 316 | 154 | 20 | 37 | 18 | 8 |
| Wahkiakum | 3,663 | 4 | * | * | 0 | * | * |
| Walla Walla | 54,406 | 109 | 200 | 10 | 0 | * | * |
| Whatcom | 159,219 | 282 | 177 | 12 | 20 | 13 | 11 |
| Whitman | 40,146 | 55 | 137 | 21 | 3 | * | * |
| Yakima | 212,008 | 668 | 315 | 2 | 55 | 26 | 6 |
| **STATE TOTAL** | **5,759,756** | **11,964** | **208** | | **2,132** | **37** | |

*Rates are not calculated from 0 to 4 cases because they are unreliable.

## Appendix

Data Sources and Methods

Confidential case reports, completed by public and private health care providers, and submitted by local health jurisdictions are the primary data source for reported cases of sexually transmitted diseases. Chlamydia, gonorrhea, and syphilis reports require laboratory confirmation to be counted. Genital herpes, NGU and acute PID are reported without laboratory confirmation.

Numerous persons and agencies submit confidential case reports and the quality and usefulness of specific data elements can vary widely. Information on race and ethnicity are frequently missing and should be considered unreliable in quantitative analysis. Other data are completely reported, e.g., provider of care, age, sex and county of residence. In 1998, the confidential database that houses STD case report information was modified to be dynamic, allowing for case report information to be corrected or changed as new information on identified cases becomes available. Because of this change, the statistics reported in this report are for STD case information known as of January 14, 2000.

## Glossary

Age-Specific Incidence Rate - A rate for a specified age group. The numerator, e.g., reported cases, and denominator, e.g., mid-year population, refer to the same age group. Age-specific incidence rates allow for the comparison of disease rates across age groups. If age is unknown, it is not included in the calculation of this rate. This rate can also be calculated by gender to account for the different disease distribution for males and females.

Case - An episode of disease. If a person is diagnosed with more than one STD in a year, each infection is counted separately.

Confidence Interval - The confidence interval (CI) evaluates the influence of chance or random variability on the statistical estimate or rate (Selvin, 1996). Surveillance data, even based on complete counts, may be affected by chance. If variation in the occurrence of the disease is random and not affected by differences in diagnosing or reporting, then confidence intervals may be calculated to facilitate comparisons over time, between groups, or between geographic locations (e.g., counties). In this situation, calculated confidence intervals should be based on a Poisson probability distribution. In general, if confidence intervals for two separate rates overlap, there is no statistically significant difference between the two rates.

Narrow confidence intervals for rates indicate with greater certainty that the calculated rate is a reliable approximation of the true rate. Conversely, wide confidence intervals signal greater variability and less certainty that the calculated rate is a good estimate of the true rate.

Crude Rate - The number of events, e.g., reported cases, divided by the total mid-year population. This rate is not “adjusted” or “standardized” for different population

discrepancies. In general, no rates should be calculated if the number of events is fewer than five because the rates are considered unstable.

Data Errors, sources of - Errors could exist in the data due to under-diagnosing, under-reporting, inability of certain populations to access medical services, error in laboratory reporting, or differential reporting or screening by source of care. Therefore, the calculated STD rates may be under-estimated.

Data Limitations - Clinically diagnosed cases of STDs (with laboratory confirmation) may be missed through this surveillance system. Presumptively diagnosed cases may be missed through this surveillance system, as would asymptomatic cases not presenting with any related illness. However, clinical practice recommendations from the CDC state all bacterial STDs should receive laboratory confirmation. Depending upon diagnosing practices, completeness of reporting may vary by source of health care. Some items are known to be under-reported or misreported, e.g., race, ethnicity, and marital status.

Denominator - The lower portion of a fraction used to calculate a rate or ratio; usually, this is the mid-year population. The source for denominator data used in this report was: Washington State Adjusted Population Estimates, Department of Social and Health Services (DSHS), April 1999.

Incidence Rate - The number of new cases of a disease (not persons) in a given year divided by the total mid-year population (age and sex appropriate) as a rate per 100,000 population. Incidence rates allow comparisons between two or more populations by standardizing the denominator and are the most appropriate statistic to use when investigating differences between groups. Incidence rates are not calculated for numerators of less than five cases, including zero cases, because the calculated rate is unreliable and subject to wide confidence intervals.

Numerator - The upper portion of a fraction used to calculate a rate or a ratio, e.g., new cases identified and submitted by providers to local health jurisdictions and forwarded to the State Department of Health, STD/TB Services.

Race and Ethnicity - The STD confidential case report includes race and ethnicity as two separate categories. Race options include White, Black, Asian/Pacific Islander, American Indian/Alaska Native, and Other/Unknown. Ethnicity options include Hispanic, Non-Hispanic, and Unknown. Following the enumeration technique of the United States Census Bureau and the Washington State Center for Health Statistics, race and ethnicity are counted separately. For example, if a case report indicates “White” and “Hispanic”, the case is counted both as White and as Hispanic. However, historical practice in disease surveillance by the Centers for Disease Control and Prevention often conflates Hispanic as a racial category. In light of this difference, care must be taken in comparing Washington State data with national or other state data.

Unstable Rates - When the number of events and/or the size of the source population is small, rates exhibit wide random variability. The addition or deletion of a few cases can have a dramatic effect on the size of the calculated rate. Unstable rates result in wide confidence intervals --generally, the smaller the numbers, the wider the interval-- and reduces the ability to detect statistically significant differences.

VISTA - A menu-driven data analysis program developed for public health assessment by Public Health, Seattle-King County. When the analysis is defined, the software activates the appropriate numerator and denominator files, analyzes them using the Statistical Package for the Social Sciences (SPSS) and then displays the results in a Microsoft Excel spreadsheet. The spreadsheet can then be used to make a wide range of Excel charts and tables.

Guidelines to Prevent Misuse of Data

Ready access to data by persons unfamiliar with the sources or unacquainted with epidemiology and statistics sometimes leads to misinterpretation or misrepresentation of information. This could result in inappropriate decision-making and potential misdirection of resources. The following guidelines may help prevent data misuse and should always be considered when reviewing data from any source:

1. Understand what you are looking at. What do the data cover? Do the data represent STD infections or persons with an STD? Do the numbers reflect new (incident) cases or cumulative numbers of cases? Are trends presented appropriately, using the same criteria for the numerator and denominator over the period of investigation?

2. Know the limitations of the data source. How is the information collected? How accurate and complete are the data? Are the data representative of a larger group or specific to a particular subset only?

3. Small increases and decreases in numbers can look large if the baseline numbers are small to begin with. For example, if two cases of chlamydia are counted in a particular county in one year and three cases are counted in the next year, this is an increase of 50%. This may sound significant, but a change of one case is not. Caution is warranted.

4. Look for consistencies with other sources of information. Results for an investigation are more believable if they are supported by similar findings from other known studies. This does not mean that new findings should be ignored, but they may deserve a little more attention in establishing their conclusions.

In summary, data should never be taken at surface value. They should be closely scrutinized, analyzed, and placed into context before any decisions are made.

References

Fleming, D.T., et al. *Herpes Simplex Virus Type 2 in the United States, 1976 to 1994*, **Journal of the American Medical Association**, vol. 337, no. 16, October 16, 1997, pp 1105-11.

*Resurgent Bacterial Sexually Transmitted Disease Among Men Who Have Sex With Men – King County, Washington*, 1997-1999, MMWR Weekly, 48(35); 773-777, Centers for Disease Control and Prevention, Atlanta, Georgia, September 1999

Selvin, S. **Statistical Analysis of Epidemiologic Data**. Oxford University Press, New York and Oxford, 1996, pgs. 21-3.

Sexually Transmitted Diseases in America: How Many Cases and at What Cost?. Kaiser Family Foundation, Menlo Park, California, December 1998.

Sexually Transmitted Disease Surveillance, 1997. Centers for Disease Control and Prevention, National Center for HIV, STD, and TB Prevention, Division of STD Prevention, Atlanta, Georgia, September 1998.